

SPORT **Aerobatics**

February 2017

OFFICIAL MAGAZINE of the INTERNATIONAL AEROBATIC CLUB



- Lost in the Box
- Your 2017 Plans
- IAC Judging
- Road to All Ten



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PUBLISHER: Mike Heuer

EXECUTIVE DIRECTOR: Lorrie Penner
execdir@iac.org

920-479-0597

EDITOR: Reggie Paulk
Reggie.paulk@gmail.com

CONTRIBUTING AUTHORS:

Jim Bourke	Mallory Lynch
Gary DeBaun	Reggie Paulk
Mike Heuer	Lorrie Penner
Brett Hunter	Allen Silver
Doug Lovell	

IAC CORRESPONDENCE

International Aerobatic Club, P.O. Box 3086
Oshkosh, WI 54903-3086
Tel: 920-426-6574 • Fax: 920-426-6579
E-mail: execdir@iac.org

ADVERTISING

Vice President of Business Development:
Dave Chaimson dchaimson@eaa.org

Advertising Manager:
Sue Anderson sanderson@eaa.org

MAILING: Change of address, lost or damaged
magazines, back issues.

EAA-IAC Membership Services
Tel: 800.843.3612 Fax: 920.426.6761
E-mail: membership@eaa.org

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EDITOR'S LOG

BY REGGIE PAULK

It's Always the People

Unique and varied personalities

HERE WE ARE, CRUISING quickly into the new year — I can't believe it's already February! Whenever we transition into a new year, I always reflect on what constitutes the value within the IAC. For me, when I think of the things that make our organization great, I can't help but think about the people.

It's rather apparent that our sport of competition aerobatics begins and ends with people.

Every month, you get to read this magazine because of the collective wisdom of thousands of people who've poured their heart and soul into their respective place on each page. We have authors who share their experiences of flying aerobatics and competition; we have photographers whose pictures tell stories; we have members who give freely of their time and effort to maintain chapters and hold contests; we have a leadership team dedicated to constantly improving and innovating the IAC; we have publications people whose sole purpose is to bring all of the above to

your attention. It's rather apparent that our sport of competition aerobatics begins and ends with people.

The beauty of my job as editor is that I get to interact with the people of the IAC. If you are reading these words, I am grateful to you for being a part of the IAC. Over the last nine years, I've had the privilege of working with and getting to know so many unique and varied personalities. I've been awe-struck by stories of pilots flying their first competition to pilots who have made the Unlimited team for the first time. I have enjoyed meeting the spouses and significant others who support their partners as they pursue their passion. It's wonderful to meet the enthusiasts who may never fly aerobatics, but who love being a part of the IAC because of what it represents to the aviation community.

As we sail into this new year, I'd like to take a moment to say thank you to those of you I know, and those of you I've never met except through our one-way communication in this letter. I appreciate your being a part of what makes this organization so wonderful. **IAC**

Please submit news, comments, articles or suggestions to: reggie.paulk@gmail.com



PRESIDENT'S COLUMN

BY MIKE HEUER, IAC PRESIDENT, IAC 4

Volunteerism — Another View

A year-round endeavour by people dedicated to IAC

EAA CEO AND CHAIRMAN JACK J. PELTON has described how important volunteers are to the EAA and sport aviation movement and far more eloquently than I ever could. EAA and its various divisions and communities are unique in the aviation world in that so many hours, skills, labor, and expertise are provided to our organizations through the vast network of members who are a part of the EAA family of organizations.

The IAC also benefits from volunteerism in so many ways, it is hard to describe. It starts at the grassroots level with our chapters, who are the bulwark of the IAC and who organize the dozens of regional competitions across the country every year in addition to holding meetings, social gatherings, and seminars for their members and others. Moving up the chain to the international level of the IAC, we have a well-functioning team of committees and chairs, a board of directors, and an active set of officers. Literally hundreds of people are involved, and many of them come together at AirVenture and the U.S. National Aerobatic Championships in addition to the meetings and conferences held every year. The IAC Executive Committee members talk frequently, sometimes daily, and each week we hold a telephone conference to review our current business operations along with the executive director.

The IAC also has a wonderful program of nonflying awards to recognize those who contribute to the organization and the sport of aerobatics in so many ways. Nominations for those awards can be submitted through our website by clicking on programs and awards. The board of directors will vote on the nominees and the awards presented when our members gather at AirVenture for our annual dinner on Friday, July 28, 2017, in the Nature Center.

All of this has been the subject of frequent articles and published news in this magazine and on our website and e-newsletters. It is always enjoyable for me to present these awards as your president and on behalf of the IAC to very worthy recipients.

Let me take another tack on volunteerism and what

it means in a very real sense to all of our IAC members and particularly those who are active in our chapters and events. As it stands today, the IAC has only one paid employee — our executive director in Oshkosh. Lorrie Penner works alone in that office, unlike in years past when we employed other people as assistants. Budget limits no longer make that possible. We also pay the editor for his services as well. The rest of our officers and directors, including this president, serve without pay. Most of my expenses are paid as president, but other officers do not receive reimbursements.

I was in Oshkosh for a few days in early January, to help Lorrie Penner transition into her new job as executive director, and I was struck by the volunteerism at EAA, even during the depths of winter in Wisconsin. One department head we met with stated that the staff in his office numbered six people, but they had a group of 50 to 60 volunteers who help throughout the year. Without that help, the work would have to be farmed out, at considerable expense, and they would not have the on-site capability they do today. We often think that volunteers are mostly there for the week of AirVenture, but in fact, they are there throughout the year.

It's the same in the IAC. We have a core group we can count on 365 days a year. What does this really mean? Think of it this way. Our members enjoy their airplanes, socializing with friends with like interests, flying in contests, practicing aerobatics with others, judging, critiquing, and generally enjoying the benefits of membership — for \$45 a year in dues to the IAC. None of these things would have been possible if that group of founding members, numbering a half-dozen, didn't come together in my father's home in the winter of 1969 and 1970 and start building what we know as the IAC today. Would there have been another aerobatic organization to take on the

continued on next page

Please send your comments, questions, or suggestions to president@iac.org.



LINES & ANGLES

BY MIKE HEUER

Eagle 40th and Extra 30th Anniversaries at 2017 AirVenture

Eagle owners and pilots: Preregistration for the 40th anniversary celebration is available online. Please go to the link below to preregister so we can see how many are coming and plan parking in the IAC area. At press time, 20 Eagles were registered. <http://www.eaa.org/en/airventure/features-and-attractions/airventure-highlight/featured-aircraft-anniversaries/christen-eagle-ii>.

Extra owners and pilots: If flying your Extra to Oshkosh in 2017, please register so we can keep you informed of upcoming activities for the 30th Extra anniversary and gathering. This also registers you for parking space in the IAC area. <http://www.eaa.org/en/airventure/features-and-attractions/airventure-highlight/featured-aircraft-anniversaries/extra>.

PRESIDENT'S COLUMN

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work we have done over the last 46 years? Maybe — and maybe not. The Aerobatic Club of America existed at the time, but its focus was on the U.S. teams and Nationals. The IAC took aerobatics to the grassroots, which was the reason for our success. We learned our lesson well from EAA, which had done the same thing many years before.

Just think of what the aerobatic world would look like if that handful of pilots had not sat down at my father's dining room table and sketched out the future and worked hard to bring it to reality. I know my life forever changed after that, and I have been involved in the IAC ever since. I count myself as one of the luckiest persons on the planet to have been there for the IAC's formation and to have seen it grow ever since. Also, to have served as a member of our leadership team for many of those years, including my current stint as your president.

So much of what we do is created, managed, and organized by people on our IAC team who fly beneath the radar. They don't seek recognition but only the satisfaction of doing something for others and being part of something good. I well remember a personal conversation I had with Curtis Pitts as we sat together in his car in Oshkosh and he thanked me and the IAC for what we had done to create an activity and a market for his airplanes. Without it, Curtis knew he could never have done what he did.

Thanks to all of you who work quietly behind the scenes and do not seek the limelight. We need you, and there would be no IAC without you. Sport aviation would not be the same.

Please send your comments, questions or suggestions to president@iac.org.

IAC



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IAC NAVY PERFORMANCE POLO SHIRT: \$49.99

IAC RED EMBROIDERED POLO SHIRT: \$39.99

IAC KIDS LITTLE STINKER T-SHIRT \$19.99

THE RED PACKABLE JACKET IS WORN BY TIM JUST, UNLIMITED NATIONAL TEAM MEMBER.
THE BUTTON-DOWN MICRO-CHECK SHIRT IS WORN BY HOWARD KIRKER, UNLIMITED PILOT.
PHOTOS BY EVAN PEERS, AIRSPACE MEDIA





Lost in the Box

A Tribute

ARTICLE AND PHOTOS BY MALLORY LYNCH

JOBS AND WORK

I am writing this as a tribute to all the people who made it possible for me to compete in the National Aerobatic Championships in Denison, Texas. I recognize that I stood on the shoulders of thousands of people who lifted me into the aerobatic box and said “fly” — from the generous people at Williams Soaring Center where I and the world glider aerobatic team train, to the IAC and all the volunteers who worked tire-

lessly as judges, coordinators, managers, gofers, and pilots.

That is the top third of the pyramid that carried me. Bearing weight were the highly cooperative airport system that made the contest a priority and welcomed us into their hangars, runways, and airspace and the businesses within the communities that welcomed us and told us they hoped we would return another year to fly again.

At the base, and often invisible,

were all those who worked tirelessly at providing comfort, including the people who toil in the gas stations, restaurants, and hotels, or replenish all the necessary supplies. I learned as a young man that a “job” is what we do to accomplish tasks or roles, but our “work” is to do our job with kindness and appreciation. I have, with much appreciation, observed a lot of people doing their “work.” Thanks!

Although I received the amaz-



Mallory Lynch

ing opportunity to go to the World Glider Aerobatic Championships, I did not go. Having flown only one aerobatic competition (the Nationals), I was absolutely overwhelmed by the uncertainty I felt both in my flying abilities and in the procedures around paperwork and politics. Instead, I spent most of the year practicing. Even then, when it was time to register for the Nationals, I was not sure I wanted to attend.

I do not do well with competition, and it takes a lot of hours to trailer a glider from Sacramento to Denison, Texas. A lot of hours. But after putting in all this effort to fly better, I decided that I would suffer more by wondering “what if?” if I didn’t go. I was headed to the Nationals. Guy (who earned first place in Advanced Glider) and I were at least smart enough to give ourselves plenty of time to drive that far, and we arrived in comfortable fashion,

put the plane together (with the Air Force cadets helping), and settled into the surroundings. A comfort wagon awaited us on our somewhat secluded, closed-runway side of the airport, and thanks to everything we learned from our experience the year before and the endless e-mails to a most tolerant Gary, it seemed like we knew what to expect and how to handle the orderly chaos that seemed so confusing last year. It was good to be back.

My practice flight went well. I flew all the figures correctly and stayed in the box. I felt relaxed. Unlike last year, when my practice flight was a nervous blur, I could “see” the box markings and the various important structures that indicated in or out. I was starting to enjoy this.

LOST IN THE BOX

My Free Known flight looked good to those who didn’t know the true sequence. To the judges, not so good. My first two figures scored 9.0 and 8.0, and the rest were hard zeros (HZs). I flew each figure crisply and accurately, except the third one — a rolling loop. This was one of my favorite figures, but in a moment of distraction I did a half-Cuban and changed direction. From there, I was lost. I was now going the wrong direction for each figure. Frozen in anxiety and confusion, I could not seem to undo the nightmare as I moved from figure to figure, flying each one with practiced precision, all the wrong way.

Our brains function on a lot of different levels, based on which parts are momentarily dominant. No one area operates alone, and as much as we would like to think we have control, we serve them as much as they serve us. I use the terms “we” and “it” to describe what J. Krishnamurti called the observer and the observed. The observer seems always to be present, taking notice and sometimes affecting what it observes (our behaviors, thoughts, emotions, well-being, etc.), while



When we first learn to do aerobatics (or on a more basic level, when we learn how to type), we focus primarily on learning the parts (letters) that make up a figure (word). The left hemisphere (LH) is dominant, while the right hemisphere, which focuses more on the whole figure, is secondary.

also being affected by the states of the observed. In my situation, I was aware that something was wrong with my sequence after the ill-fated rolling loop, but I was not sure what to solve or how to solve it. My memory of the flight and surroundings was painfully clear, but I could not come up with a solution.

LEFT, RIGHT, WHOLE BRAIN

The following is a simplification, but when explaining the mind, what isn't? When we first learn to do aerobatics (or on a more basic level, when we learn how to type), we focus primarily on learning the parts (letters) that make up a figure (word). The left hemisphere (LH) is dominant, while the right hemisphere, which focuses more on the whole figure, is secondary. In music, we focus on each note primarily. As with learning how to type, we stop, look where our hands are, and start over. Our minds lack the necessary kinesthetic memory, so it takes most of our attention to find the keys. (In flying, our spatial vision is still narrow, and we have difficulty "seeing" or "feeling" what is happening.) We are often more tense, unsure, and hesitant. Especially in a task as difficult as aerobatics, it can seem uncomfortable and overwhelming. Angles, curves, lines, speed, *g*-forces, stick, rudder, and earth's gravity all demand primary attention of the left hemisphere. With instruction, repetition, and practice ... over and over, letter by letter, wiggle by wiggle, note by note, we learn, until one day a shift occurs that goes almost unnoticed.

The secondary right hemisphere, working quietly behind the noise of the primary left, suddenly becomes dominant. It created "the whole" of the parts into a figure, word, or basic melody, and suddenly the sacred oval roll just happens. "Unbelievably wow," the mind says, and the next time we try the same figure, our mind has shifted back



a rolling loop. My second figure in the sequence was a hammerhead. When I flew in the Nationals last year, my repeat HZs were the hammerhead and the tailslide. So this past year, I spent a lot of time flying those figures. Ninety percent of the time, I flew them well. It was that 10 percent that started bothering me, especially as the contest neared. Doubts began to surface. The HZ memories from my experience during the 2015 Nationals had “amygdala etched.” HZs equaled *snakes*. Contests and hammerheads/tailslides were troubling experiences to avoid. Contests and being judged were experiences to avoid. My biggest fear was expressed by a fellow pilot just before I flew: He said that he hoped he didn’t embarrass himself in front of all these people. My amygdala-dominated brain grabbed onto that like stink when you step on dog poop. As DLB (Dale Bush) says, it doesn’t take full effect until you step on and activate it. I stepped on it, and by the time I reluctantly forced my body into the Fox glider, I was “activated.”

Trouble begins. Minutes later, as I did the hammerhead in the Free Known (and I did it worthy of an 8 average), my attention momentarily shifted into astonishment. I remember my mind reflecting something like, “That was pretty good.” Oops, left hemisphere had shifted into dominance. I was focused, albeit briefly, on the figure and not the sequence. I was “thinking” it through. Seconds later, when I started the rolling loop, I was not in tune with the sequence/melody. Not able to shift dominance back to the right hemisphere, I was trapped doing one amygdala-focused figure after another.

THE CLOSED MIND

Simple solution, says the power pilot. Wing wag, exit the box, collect yourself, reorient, re-enter to finish the sequence. This leads into the hard-learned lesson about

again, and we do worse than when we started. What happened? Easy. The mind shifted back to primary LH on parts, and we are trying to “think” our way through it. Seem familiar? This is often a very discouraging aspect of learning, or performing/competing. With sufficient practice, however, the right hemisphere becomes dominant/primary. The figures have built into our spatial system. Michael Polanyi described this as the shifting of focal and subsidiary awareness.

As we continue to build our skill levels, we again shift dominance. Figures and words begin to be the more complex parts that the dominant left hemisphere is using to help the secondary right hemisphere learn to form intricate

sequences and sentences. Two or three figures, and then pause, repeat. Repeat, add more, repeat, and over time the dominant right hemisphere shift occurs again.

However, another change is occurring at this level. I will call it the 1,000th flight syndrome. The whole brain, through multitudes of connecting neural pathways, begins to function on a higher level. Sequences are becoming dances in the air, sentences become stories to share, notes become melodies, and we for a moment know the answer to the question so often asked: “Why do you fly aerobatics?”

THE AMAZING AMYGDALA

This brings me to how I managed to do a half-Cuban instead of



Haven't we all paused in life, wondered where the hell we were and how we got there — and more importantly, how we might get reoriented? Perhaps that is why I like flying gliders so much, and more so aerobatics.

a closed mind. J. Krishnamurti also wrote about something called the “impossible question.” The question was basically whether the mind could entertain a question without having to answer it. As with most minds, the minute we start asking that question, we start trying to answer it. His premise was, in my limited understanding, that if we answer the question, our minds become closed to further exploration or insight. We discard contradictory data and limit optional thinking/solutions. I did just that.

A few hours before my flight, I was on the judging line, assisting. We were judging the power and glider Primary and Intermediate performances. Numerous times I had witnessed the power pilots “wagging” out, pausing for some time, and re-entering. We jokingly commented how impossible it would be for the glider pilots to do the same. That was partly true, because if we took the time that the power people were taking, we would lose too much altitude to continue safely. Added to this, I had never seen, nor even heard of, a glider pilot wing-wagging out and returning. My mind was now closed within its own box. An amygdala-activated, closed mind does not solve problems well.

In times of high stress, we often resort to the lower level of habitual functioning to solve problems. We become more reactive-active or, worse, more reactive. Remembering that our limbic “lizard brain” system does not know how to fly, operating in the reactive state is often maladaptive and dangerous. This is probably one of the most important aspects of continued instruction/training and practice. We develop the multitude of neural pathways that not only enhance skills but also build in backup systems. Therefore, when overwhelmed, as I was in that case, my fallback was to fly the figures safely and precisely — a much better option than becoming dangerously distracted, covering my eyes, and looking for a rock to crawl under.



THE BUZZARDS ARE CIRCLING

Of course, I did want to hide after my flight was completed. I scored a 23 percent. That was the lowest score of the day and probably for the contest. I was looking for a rock to hide under that night and the next morning. Added to that, my back-door windows had been broken while my car was parked in Sacramento, and my favorite cat was missing for five days. Even with all the support that other pilots and judges gave me at the morning meeting, I was feeling sorry for myself.

Haven't we all paused in life, wondered where the hell we were and how we got there — and more importantly, how we might get reoriented? Perhaps that is why I like flying gliders so much, and more so aerobatics. It

is a repeating life lesson. Although unhappy with your situation, you absolutely need to know where you are, how you got there, and how to fix the problem. I was in an emotional inverted spin caused by an inappropriate response to a failed life maneuver. Flying is never just about flying; it's also about who we are.

So I am walking along the closed runway, looking down — which is what I do when thinking too much — and out of the corner of my eye I see turkey vultures circling. Low to the ground, moving within a small thermal, they pulled at my troubled mind. To the XC glider pilot, seeing buzzards circling is a good thing. They have often pointed to a thermal that provided me a “low save.” For years I would join them, more

frequently failing to find the lift adequate for my stumbling attempts. Nevertheless, my skills and confidence improved with practice, expanding not only my ability to soar but also my ability to see them more often. From then on, they have given me guidance, and at this moment I needed a “low save.”

Unless I am flying, when I am looking down, my vision is often narrow. When I am upset, anxious, and overthinking things, my vision is narrow. When I am too tired, dehydrated, or not getting enough oxygen, my vision is narrow. When I look up and around, pause to rest and breathe, or even take in a cool drink of water, my vision expands, and for a moment I see the world of possibilities again. They aren't always great possibilities, but perhaps they are better than turning inward and being lost in self-absorption.

I should have titled this “Confessions of a Glider Pilot.” I have a saying that helps during these times, and any time I remember to say it:

Hear the wind.

See the hawk fly.

Feel the dolphin swim.

Live this moment.

I then focus on being more fully in the moment — listening, seeing, and feeling what is around me. I recognize that my most precious memories occur when I am truly present, by choice, by something original and/or demanding, and by both suffering and joy. The observer and the observed for a moment are one. The mind is quiet, and “we” can experience “the whisper.”

I was reminded that this too shall pass — both the “suffering” and the joy. That this might be the last time I heard the roar of aerobatic engines, or see Sherman-Denison, or feel the earth beneath. I forgot the truth of my finiteness and the importance of living in this moment. I forgot, as Noelle Mayes of Williams Soaring Center says, that this is supposed to be fun.

I was starting to enjoy this again.

IAAC



So What Are Your Aerobatic Plans for 2017?

And some thoughts on teams

BY BRETT HUNTER

So what are your aerobatic plans for 2017? Have you set any goals? How about your ultimate goal in aerobatics? Where is this journey taking you?

If your thing is hitting a local regional contest or two with your personal hot rod and having a few beers with friends in the evening, that is great. But if you want to advance in category and proficiency, you need a plan. You need a coach, not just a criticizer or a judge's eye, but someone who can guide you through the maneuvers and the entire sequence.

It's not all pulling *g* and stomping rudder. A good critique can get your lines straight and rolls

centered, but why do your snap rolls score poorly, or why aren't you consistent? Even if you have the individual figures mastered, can you keep them in the box? So you have the Known all figured out, how about that free-style? Did it work well last year? Any changes to be made? Did you get any coaching? How did you improve last year? What needs work yet? Managing energy goes a long way, but how's your positioning, are you building your free to display your strengths, are you rolling and snapping the correct direction at the right time? A good coach can really move you forward in all aspects.

Coaching saves money in the long run. I have tried both ways. I have wasted a lot of gas having a lot of fun and flopping around till I could get reasonable results. Working with a coach I had to relearn a good deal of muscle memory and modify a lot of headwork — two steps back for me.

Then, I watched as a brand new aerobatic pilot went from Sportsman to Unlimited in two years working with a coach inside organized training camps twice a month during "the season." This was a highly organized, individual-focused program.

Another approach again with a professional coach: training



EVAN PEERS

Four of the world's best aerobatic coaches were at Nationals 2016. Left to right: John Morrissey, Nikolay Timofeev, Coco Bessiere, and Sergey Boriak. They are responsible for training many of the world's finest aerobatic pilots and past world champions.

camps. This splits the costs and is a lot of fun; you have training partners as well as a coach.

Are you aware of the right mindset for your peak performance? "A mind is a terrible thing." Ever notice it's different running through a sequence at your home box versus flying at the contest? Why is that? It's probably different for everyone, but you need to find the right way to build yourself into the right mindset every time. The tai chi "dance" we do prior to flight is probably not enough to put you into the zone — it is only a piece. Again the right coach can guide you here as well.

What is your physical training plan? Do you exercise regularly? Do you have any health concerns that might interfere? What is your *g*-tolerance? How do you build it up? Do you know your personal warning signs for *g*-induced loss of consciousness (*g*-LOC)? Have you heard of the



Mike Ciliberti and Sergey Prolagayev epitomize the fun in training camps!

"wobblies"? What's your plan to avoid them?

Personally I was surprised to learn how common the wobblies are in this sport. Just about everyone flying at the Advanced or higher levels has to deal with some element of it. I assumed it to be a neuro-vestibular con-

dition leading to severe vertigo and caused mostly by exposure to negative *g*'s. But it seems to have a variety of causal factors, and everyone needs to be careful how they approach high-speed high-*g* aerobatics.

I always try to take three to four months off completely from



If we are going to compete on an even field with the French, we need to look at why they are successful. Sure they have funding, equipment, and plenty of opportunity, but we have some of that here and there. What's the secret ingredient?

the sport and then start over fresh each spring. My program evolved into a one-month acclimation period each year. I start with three flights per day three to five days per week and perform only positive-g maneuvers with basic -1g exposure until nine solid flights were logged in a 10-day or less period. Then I add more negative g and more positive g progressively until I get to the max needed for the plane. Even doing this gentle buildup I managed to compromise my neck somehow. So be careful!

This sport can be a tremendous amount of fun at any level you choose to participate. There is always more to learn and additional situational-based challenges to face. The higher up in the categories, the more time you have to put in to stay proficient — let alone improve. So how far do you want to take this sport?

Why not to the national level? Or dream really big and try to get on a world team!

Speaking of world teams, I have been able to participate on two recently and have had some time to think about it now. Ever notice the United States always finishes third?

We need structure. If we are going to compete on an even field with the French, we need to look at why they are successful. Sure they have funding, equipment, and plenty of opportunity, but we have some of that here and there. What's the secret ingredient? It's the way they go about putting a professional team together each year. The management controls the funding so it can control the team and the team selection. Aptitude and desire are important, but without direction it's pointless or random. The French have a process for each pilot and for each year's team. They have the right equipment; they train often and consistently with coaching and feedback from the coach,

their teammates, and the very judges who will be scoring them at national and international contests. Think about that; not just burning gas and guessing, but high-quality correctional instruction, institutional knowledge handed down inside the team, equipment, and funding all organized to win. We don't have that here.

Our system in the United States leaves much to be desired. But is it possible to incorporate some or all of these ideas into our teams?



Brett Hunter

Brett Hunter, Corporate Pilot, Air Show Pilot
U.S. World Team Member 2013 and 2015
Aerobatic Instructor and Coach
brett.hunter@earthlink.net, 513-464-1151



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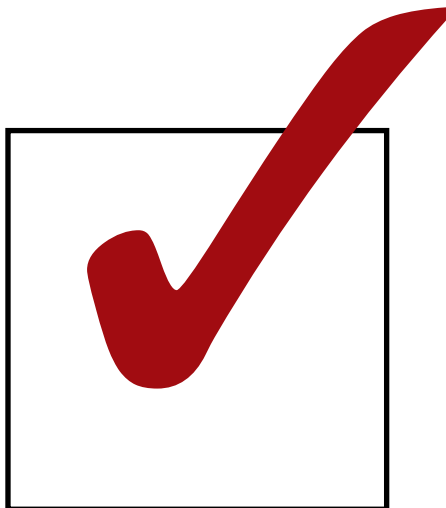


Just How Good Is IAC Judging?

REPRINTED FROM *SPORT AEROBATICS* APRIL 2012

A statistical look

BY DOUG LOVELL



The IAC is very fortunate to have a rich mine of aerobatic contest data. Thanks to Randy Owens, “Bwana” Bob Buckley, and our dozens of scorekeepers, we have just about every grade, from every judge, from every pilot, for every flight, in every IAC regional contest going back through 2005. That is almost 86,000 grades, more than is available from any other source.

With some prodding from a few other directors, including Klein Gilhousen, Tom Adams, and Wayne Roberts, I have compiled and processed this data in 2012 in an attempt to get some meaningful information and measures of judging quality in the IAC. People talk more or less subjectively about whether the judging is any good. That usually goes along with their grades. If their grades are good, the judging is great! Here’s an objective look at some numbers.

We came up with three different metrics with which to measure the performance of judges. All of them have to do with how closely the individual judge grading measures up against the collective, overall scoring result. The measures take into account two different comparisons of judge placement versus overall placement.

The first comparison is the actual score. We have the overall number of points achieved by a pilot versus the number of points given a pilot by the individual judge. The second comparison is the rank. A pilot’s rank is the number of pilots who did better, plus one. The rank is commonly referred to as the placing. The first place pilot has

rank one. The second place pilot, rank two, etc. We can compare the rank achieved by the pilot with the rank given by each individual judge.

A major advantage of using rank is that rank strips away differences in scoring styles. A judge who gives generally lower grades might rank a pilot the same as a judge who gives generally higher grades. We ask judges to be consistent, and hope that each judge ranks the pilots fairly by applying consistent criteria in their grading.

The first of the three major judging quality measures we examined is RI (said “are eye”). RI is a formula agreed and approved by CIVA over a decade ago for evaluating international judges. A zero value for RI means the judge ranked the pilots exactly the same as the overall ranking, regardless of how that judge graded the pilots. When a judge ranks a pilot differently than the overall ranking, RI penalizes the judge to an extent measured by the difference in the judge’s score and the overall score. Higher RI is bad. Zero or lower RI is good. RI makes no penalty for strange grading unless the judge gets the ranking wrong. When a judge gets the ranking wrong, RI penalizes strongly for grading differences.

The second of the measures we examined is Rho (said “row” as in “row your boat”). Rho is a standard textbook statistical metric developed by Charles Spearman, now in use for over a century. It is a distance formula that measures how far an individual judge’s ranking of the pilots differs from the overall ranking.

A Rho value of 100 means the judge ranked the pilots in perfect agreement. A Rho value of

RI is a formula agreed and approved by CIVA over a decade ago for evaluating international judges.

minus 100 means the judge was perfectly upside-down. A Rho value of zero means the judge was neither in agreement or upside-down.

The last of our measures is Gamma (as in “gamma ray”). Gamma is a second textbook metric developed by Leo Goodman and William Kruskal at the University of Chicago in the 1950s. Kruskal served terms as president of both the Institute of Mathematical Statistics and the American Statistical Association.

Gamma looks at every possible pairing of pilots in a flight. If both the judge and the overall ranking place pilot A before pilot B or vice versa, that is a “concordant pair.” If the judge puts pilot A before B while the overall ranking places pilot B before A, that is a “discordant pair.” The Gamma measures the proportion of concordant and discordant pairs for each judge. The interpretation of Gamma is the same as for Rho; 100 is perfect, zero is bad. Negative values are worse down to minus 100, which means the judge’s rankings were upside-down relative to the overall rankings.

You can view mathematical details in the notes pages at IACCDB.org: www.IACCDB.org/pages/notes#metrics.

It’s important to note the metrics don’t tell us which judge was right. It’s entirely possible that four judges agreed on ranking an inferior performance first while a fifth judge correctly gave a first ranking to a superior pilot. The judge with the lowest metric might, in some rare circumstance, be the only judge who saw the flight correctly. The metrics tell us only which judges were in agreement with the overall result. The only way to measure actual correctness of the judging is to compare with the judgments of an expert. If we could all agree who the expert is, we could put the expert on the judging line and let him or her decide the contest.

For all of the experiments, we took the judge metric data from all of the flights in which there were nine or more pilots. With fewer than nine pilots the data tends to get “noisy.” On two-pilot contests, for example, there are sometimes a couple of judges who have minus 100 and high RI because they ranked the two pilots opposite the overall result. The nine-pilot mark left us with almost 4,000 flights to look at. For a good statistical analysis, that is plenty.

First, we looked at the metrics themselves to compare them. Do they measure the same thing or something different? Figure 1 shows an x-y plot of the Rho and Gamma metrics. Each point has the value of Rho and the value of Gamma for one judge on one flight. It’s clear that if the value of Rho is high (good), the value of Gamma is

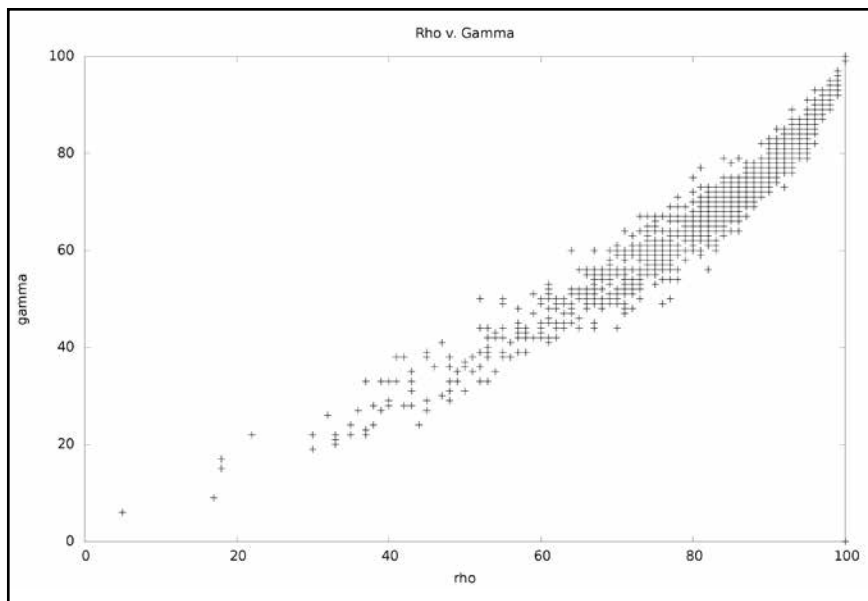


FIGURE 1

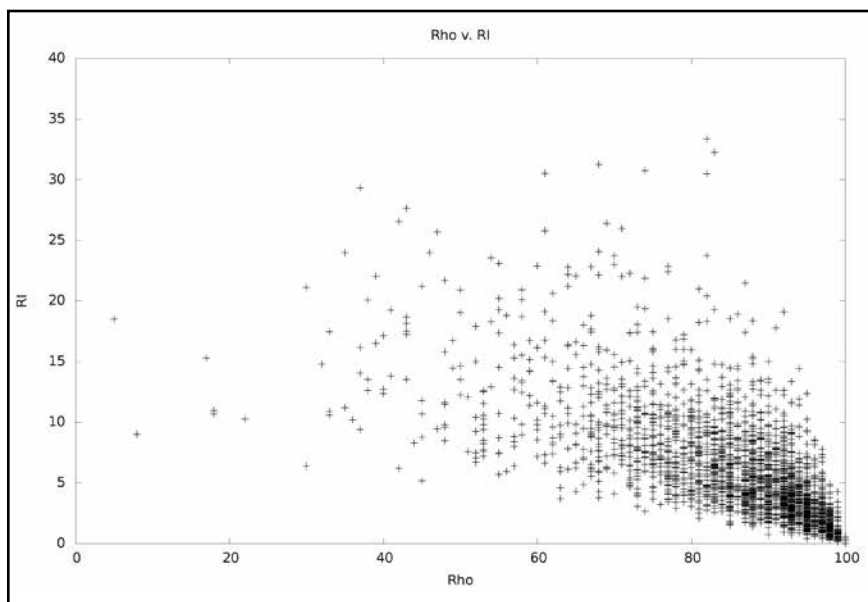


FIGURE 2

also high (good). Rho and Gamma are what statisticians call “highly correlated.” They are comparable measures. If you know the value of one, then you can fairly predict the value of the other.

Next we looked at Rho together with RI. Do they measure the same thing or something different? Figure 2 shows an x-y plot of the Rho and RI metrics. Each point has the value of Rho and the value of RI for one judge on one flight. When Rho is high (good), RI tends to be low (good), but spreads in a range about five to seven points wide. As Rho gets lower, the RI spread becomes rapidly more pronounced.

You cannot very accurately predict the value of RI given Rho as Rho gets lower, nor can you predict the value of Rho given RI. Whatever RI is measuring, it isn’t exactly the same as what Rho (and by inference, gamma) is measuring. You can tell that very good Rho will share a corner with very good RI — sort of.

To answer this question we plotted, for each judge, all of their Gamma and RI

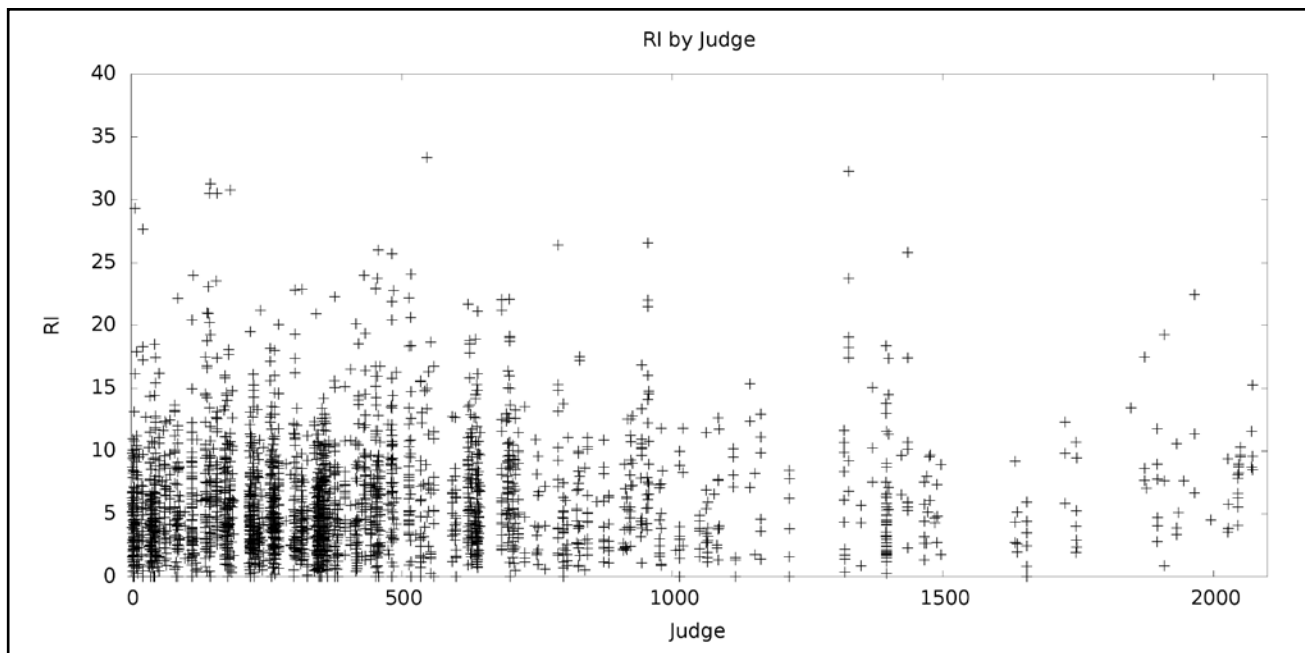


FIGURE 3

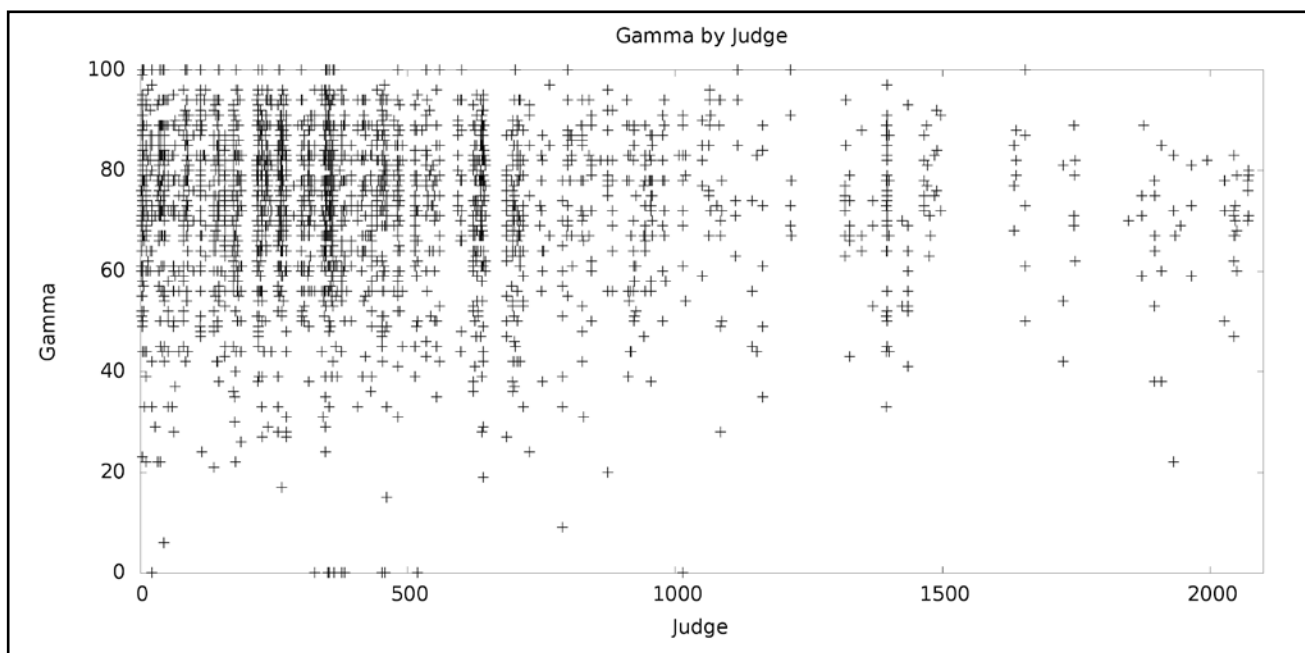


FIGURE 4

values. Figure 3 shows the plot for RI. Figure 4 shows the plot for Gamma.

First, for any given judge, the values do not cluster around any particular value. This means that the value of RI or the value of Gamma on one flight does not give any indication of how a judge will perform on the next flight. That a judge looks out of whack on one flight doesn't tell you they are a bad judge. Nor do zero RI and 100 Gamma tell you they're the best judge in

the world. If they did that consistently on every flight judged, they would be the best judge in the world. Doing it on one flight is good-great — for that flight.

Second, the values of RI and Gamma fall into about the same range for every judge. There is really good news in this. For all of the judges, most of the values are in the 55 to 100 range for Gamma and below 15 for RI. The histogram in Figure 5 shows the distribution of Gamma values as-

signed all judges on all of the flights. It confirms that the agreement of the judges is pretty good most of the time. We are very fortunate in the IAC to have, with occasional exceptions, a panel of judges who agree on the pilot rankings. The IAC can train judges, place them on the line, and get very good results.

We see every IAC judge without exception out of whack with the judging line once in a while, spot on ranking the pilots nearly perfectly once in a while, and most frequently ranking about three-quarters of the pairs in agreement with the result. With a 75 percent confidence of one judge having any pair-wise

ranking correct, there is an 84 percent confidence that a three-judge agreement is correct, 90 percent confidence that a five-judge agreement is correct, and 93 percent confidence that a seven-judge agreement is correct. The more judges who agree, the better our confidence in the result, and that's why we go to the trouble of fielding as many well-trained and competent judges as we can muster at a contest.

We can work with our training programs to improve the 75 percent number. We can monitor the number to verify improvement. Keep in mind that number is very good. On a

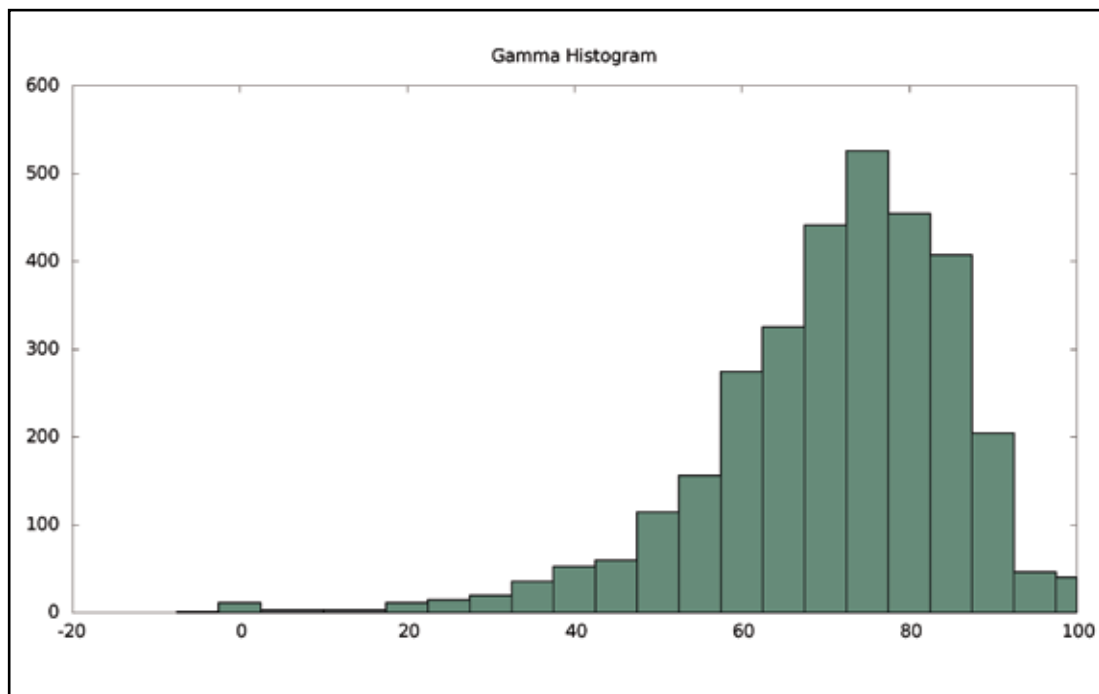


FIGURE 5

12-pilot flight there are 66 pair-wise rankings. Judges are getting about 50 of those in agreement with the panel.

We'll look more in depth in another article at individual flight results and what they can tell us. The conclusions to draw from this article are these:

- We now have three metrics for every judge, on every flight, in every category, at every contest in the IAC. The Rho and Gamma metrics have a strong correlation, showing that they consistently measure something similar.
- The judge metrics on flight results tell us which judges agreed about the pilot performances on that particular flight. No

one can draw conclusions from one flight about how good the judge will be in general, or about whether a judge will agree with the judge panel on another flight.

- Looking at thousands of flights, the judge metrics show that, in the IAC, every judge will agree more closely on some flights, not so closely on others, and acceptably well just about all of the time. In general, we have very good judging panels in the IAC.

My thanks to Tom Myers, Wayne Roberts, Tom Adams, Klein Gilhousen, and Don Peterson for their reviews of this article. The article benefited greatly from their questions, suggestions, and observations.

IAC

The Road to All Ten

Jim Bourke is No. 39!

BY LORRIE PENNER
IAC ACHIEVEMENT AWARDS CHAIR

WITH JIM BOURKE

In the history of the IAC only 39 pilots have won the coveted All Ten award, honoring pilots who earn all five Star awards and all five Smooth awards.

I asked Jim, the most recent recipient of the All Ten award, about his experience.

How did you get into aerobatics?

I've been going to air shows since I was a little kid. I remember watching the Blue Angels while sitting on my dad's shoulders at the Offutt AFB open house. I flew a bit of aerobatics with my dad as a teenager, but I spent most of my

time with RC models until about 10 years ago when I decided it was time to put myself in the airplane.

Who inspired you most in aviation?

I met Pappy Boyington when I was 6 or so. I loved the show about



Jim Bourke

him on TV at the time, *Baa Baa Black Sheep*. I consider him to be my earliest aviation inspiration. Most of the people I've idolized have been combat pilots, particularly World War I aviators.

There are aerobatic pilots I idolize as well, but they might read this, and I don't want to embarrass them.

How did you earn each of your Star awards?

I won the Best First-Time Sportsman award at the 2008 Apple Turnover in Ephrata, Washington. That was my first contest. Oddly enough I didn't fly Primary until after I became an Unlimited pilot. I don't remember deciding to skip Primary. I didn't know a lot about contests; I just showed up and had a good time.

It took awhile to move up to Unlimited because I took a break from aerobatics. I had some airplane and family issues to deal with. I

got back into aerobatics in 2014 with an Xtreme Decathlon. I flew Sportsman to good effect, then moved up to Intermediate after a couple of contests. I earned the Star award for Intermediate at the 2014 Coalinga Western Showdown in California.

I started working on the Advanced sequences in the Xtreme Decathlon, then realized that I wouldn't meet my survival goals, so I bought an Extra 330LX. I got my Star award for Advanced in 2015 again at Coalinga.

Next came the Primary award. At the Apple Turnover in Ephrata in 2015 I was asked to fly for the Primary patch so we could have a full category.

The Unlimited Star award turned out to be a bit elusive; it took me seven contests to get it. I got very close a couple of times, but to get the Star award in Unlimited is tricky because there are so many places a judge can find deductions.

I got extremely close at the Hammerhead Roundup this year in Borrego, California, but it was a three-judge line and there is a special rule about this situation that requires more scrutiny. One of my figures earned scores of HZ, A, and 8.0. Even though the score resolved to an 8.0, I was denied the Star.

It was serendipitous that I won the final Star award at our new contest, the Corvallis Corkscrew. Putting on a new contest was a lot of work but tons of fun. It felt great to get that last Star award after all the hard work.

How did you decide when to move up in category?

At each new level there are additional training requirements. I didn't move up to a new level until I knew I was ready to make the commitment. It was okay with me if I flew badly once in a while as long as I knew I was making progress. I struggled a bit in Advanced



Patch Day

at first, but I didn't get discouraged because I knew I was putting in the time on the right things. Eventually that work pays off.

The Star awards are good milestones for competition pilots. It's a better metric than how many "clinkies" you've won because the Stars are not dependent on anyone else. It probably makes sense to wait until you can earn a Star any time you want in your current category before you move up. A lot of people wait until they reach a score threshold like 80 percent or some other number, and that is a good way to do it, too.

That said, I don't think moving up is or should be everyone's goal. Intermediate is tons of fun and can be enjoyed more casually than Advanced or Unlimited. Someday when I get tired of Unlimited I'll probably go back to Intermediate and hang out there.

How did you earn the Smooth awards?

I didn't think much about these awards at all until we did a patch day at Corvallis, Oregon. We had our brand new waiver for the aerobatic box, and it seemed like a good idea to have a club flying day. I sat on the ground and helped a half-dozen pilots through their Primary, Sportsman, or Intermediate Smooth awards.

Unfortunately, I was the only judge at the event, so no one could help me with my own awards. I had to wait until the Beaver State Regional in Pendleton, Oregon, this year to do it.

I talked with the contest director, Sean VanHatten, and we came up with the idea to fly all the Smooth award figures in one flight after the conclusion of the contest. This served a dual purpose because it allowed everyone interested in judging to go out to the line and earn their credit with a judge mentor. We broke out the figures into three programs so the judges could get the needed credit.



Sean VanHatten

LAURIE ZALESKI

I thought for a bit about how to approach this in one flight. I had two major and probably obvious concerns: fuel and fatigue.

The fuel issues were solved by dialing the prop back to 2100 for all the figures in the Primary through Intermediate categories and just not wasting a lot of time in general. After I finished all the flying I had enough fuel to do some freestyle figures and land with 5 gallons (out of 17).

Fatigue turned out to be more of a problem than I thought, in the form of dehydration. I made short work of the first 20 figures or so, but then we had a break or two while we worked out the rest of the figures. It was a hot day, and I was absolutely covered in sweat. This reduced my g tolerance more than I expected. I

found by the end of the flight I had to keep my turns between figures gentle to prevent grayout.

There were also a couple of moments of miscommunication near the end of the flight that I take full blame for. I was supposed to do a snap roll on a 45 up. I heard it first as a snap roll on a vertical up, so I did one of those. When I heard that wasn't right I thought the figure wasn't good enough so I did another. Then the third time I did it with an outside snap. I think I was just tired and a bit stupid from all the g's at this point. Once we finally got it sorted out I hit the 45 and delivered a terrible snap roll. I had to do the figure over!

The rest of the flight went pretty well. I got fair scores from Sean and the other judges. When I landed, several of us talked about the experience, and we all agreed it was very helpful to the candidate judges to have the chance to sit with a mentor judge during a noncompetition flight. We should do that again regardless of whether it is for an award.

Any closing thoughts?

I'm very grateful for this IAC program. It lets a competitor take something away from a contest even if they don't reach the podium. That's important because you cannot win every time, but you can always do your best! I will treasure this award and the many happy memories I associate with it.

IAC

About the Awards

The Star awards are earned when a competitor flies an entire competition without earning any score below a 5.0. The IAC score database on the IAC website shows an asterisk next to the name of any pilot who has earned a Star award in the competition.

Sportsman Power

Pilot	Airplane	Known	Total
★ Robert Dumayic (35)	Extra 200 N211EX	1013.67 76.79% (1)	1013.67 76.79% (1)
★ John Shavinsky (35)	Extra 300L N164EX	980.83 74.31% (2)	980.83 74.31% (2)
★ Sheldon Appell (35)	Extra 300L N53NL	939.83 71.20% (3)	939.83 71.20% (3)

The Smooth awards are awarded outside of the contest environment. To earn these a pilot must fly a predetermined set of figures appropriate for his or her category.

To learn more and to download achievement award applications, visit the Achievement Awards page on www.IAC.org.

VINTAGE QUALITY



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AVAILABLE AT WWW.IAC.ORG and click on Store

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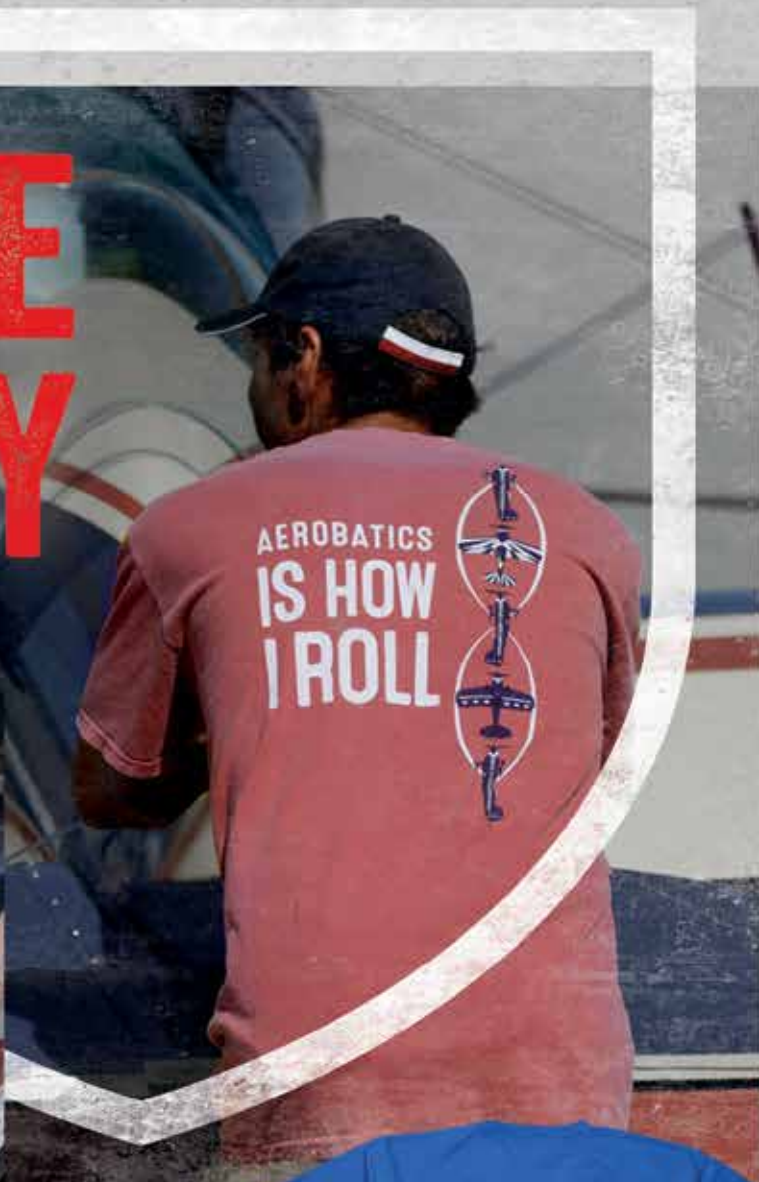
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IAC CHIPMUNK T-SHIRT: \$25.99

IAC EXHIBITION T-SHIRT: \$24.99

IAC VINTAGE SHIELD CAP: \$24.99

THE VINTAGE WASH "HOW I ROLL" T-SHIRT IS WORN BY INTERMEDIATE PILOT, STEVE DE LA CRUZ.
THE LADIES "WINGS MOVE THE SOUL" T-SHIRT IS WORN BY MAGGIE DE LA CRUZ.
PHOTOS BY EVAN PEERS, AIRSPACE MEDIA



CONTEST CALENDAR



Mark your calendars for these upcoming contests. For a complete list of contests and **for the most up-to-date calendar, visit www.IAC.org**. If your chapter is hosting a contest, be sure to let the world know by posting your event on the IAC website.

"Snowbird Classic" Aerobatic Contest (Southeast)

March 31 – April 1, 2017

Practice/Registration: Wed, March 16 – Thurs, March 17

Rain/Weather: Sunday, March 20

Gliders Categories: Sportsman

Power: Primary through Unlimited

Location: Marion County Airport, Dunnellon, Florida (X35):

Dunnellon, Florida

Region: Southeast

Contest Director: Mark Nowosielski

Phone: (678)438-0533

E-Mail: av8ter76@yahoo.com

Website: <https://www.iac.org/contest/snowbird-classic>

Hammerhead Roundup (Southwest)

April 7 – April 8, 2017

Practice/Registration: Thursday, April 7

Rain/Weather: Sunday, April 10

Power: Primary through Unlimited

Location: Borrego Valley Airport (Lo8): Borrego Springs, CA

Region: Southwest

Contest Director: Zachary Niles

Phone: 949-278-6608

E-Mail: mc@sunriseaviation.com

Website: www.iac36.org

Carolina Boogie (Northeast)

April 14 – April 15, 2017

Practice/Registration: April 13-14

Power: Primary through Unlimited

Location: Wilson Industrial Airport, NC (W03)

Region: Northeast

Contest Director: Eric Sandifer

Phone: 919-605-9585

E-Mail: n100mp@yahoo.com

Ben Lowell Aerial Confrontation (South Central)

April 22 – April 23, 2017

Practice/Registration: Thursday, April 21

Power: Primary through Unlimited

Glider: Sportsman through Advanced

Location: Borrego USAF Academy Airfield, CO (KAFF)

Region: South Central

Contest Director: Mark Matticola

Civilian Liaison: DJ Molny

Phone: 303-619-4814

E-Mail: djmolny@gmail.com

Sebring 75! (Southeast)

May 4 – May 6, 2017

Practice/Registration: April 29-May 3

Power: Primary through Unlimited

Glider: Sportsman through Unlimited

Location: Sebring, FL (SEF)

Region: Southeast

Content Director: Joe Brinker

Phone: 561-346-1656

E-Mail: mechartistry@gmail.com

Hoosier Hoedown (Mid-America)

May 20 – May 21, 2017

Practice/Registration: May 19

Power: Primary through Unlimited

Location: Kokomo Municipal Airport, IN (KOKK)

Region: Mid-America

Contest Director: Mike Wild

Phone: 765-860-3231

E-Mail: mike.wild@comcast.net

Coalinga Western Showdown (Southwest)

June 2 – June 3, 2017

Practice/Registration: June 1

Power: Primary through Unlimited

Location: New Coalinga (C80): Coalinga, CA

Region: Southwest

Contest Director: Brennon York

Phone: 260-705-0755

E-mail: brennon.york@gmail.com

Website: www.iac38.org

Lone Star Aerobatic Championships (South Central)

June 2 – June 3, 2017

Practice/Registration: Thursday, June 1

Power: Primary through Unlimited

Location: Fort Texas Regional Airport (KGYI)

Region: South Central

Contest Director: Bill Denton

E-Mail: loop4fun@gmail.com

Website: www.iac24.org

Southeast Aerobatic Open-Bear Creek Bash (Southeast)

June 8 – June 10, 2017

Registration: June 8-10

Power: Primary through Unlimited

Location: Rome, GA (KRMG)

Region: Southeast

Contest Director: Mark Fullerton

Primary Phone: 864-316-5250

E-Mail: markpcc2003@yahoo.com

Ohio Aerobatic Open (Mid-America)

June 16 – June 17, 2017

Practice/Registration: Thursday, June 15

Rain/Weather: Sunday, June 19

Power: Primary through Unlimited

Location: Bellefontaine Regional Airport (KEDJ):

Bellefontaine, OH

Region: Mid-America

Contest Director: Gordon Penner

Phone: 513-520-6065

E-Mail: penner.gk@gmail.com

Website: <http://www.iac34.eaachapter.org/>

Apple Cup – IAC West Open Championship

June 23 – June 24, 2017

Practice/Registration: Wednesday, June 21-22

Glider: Sportsman through Unlimited

Power: Primary through Unlimited

Location: Ephrata Municipal Airport (KEPH)

Region: Region Northwest

Contest Director: Rochelle Oslick

Phone: 206-783-5141

E-Mail: rhoslick@gmail.com

Gulf Coast Regional Aerobatic Contest (South Central)

June 23 – June 25, 2017

Practice/Registration: June 22–23
Power: Primary through Unlimited
Location: Jackson County, TX (26R)
Region: South Central
Contest Director: Denny Beacham
Primary Phone: 832-248-5560
E-Mail: denny.beacham-1@nasa.gov

Michigan Aerobatic Open (Mid-America)

July 8 – July 9, 2017

Practice/Registration: Wednesday, July 7
Power: Primary through Unlimited
Location: Bay City James Clements Municipal Airport (3CM): Bay City, Michigan
Region: Mid-America
Contest Director: Brian Roodvoets
E-Mail: redfoot@chartermi.net
Website: iac88.eaachapter.org

Green Mountain Aerobatics Contest (GMAC) (Northeast)

July 15 – July 16, 2017

Practice/Registration: July 14
Power: Primary through Unlimited
Location: Hartness State Airport (Springfield) (VSF): Springfield, Vermont
Region: Northeast
Contest Director: Bill Gordon
E-Mail: wsgordon@earthlink.net
Website: IAC35.aerobaticsworld.org

Corvallis Corkscrew (Northwest)

July 14 – July 15, 2017

Practice/Registration: July 13
Power: Primary through Unlimited
Location: Corvallis Municipal Airport, WA (KCV0)
Region: Northwest
Contest Director: Jim Bourke
Phone: 541-231-6077
E-Mail: jtbourke@gmail.com

High Planes Hotpoxia Fest (Southwest)

July 15 – July 16, 2017

Practice/Registration: July 14
Power: Primary through Unlimited
Location: Fort Morgan Municipal Airport, CO (KFMM)
Region: Southwest
Contest Director: Dagmar Kress
Phone: 303-887-4473
E-Mail: dagmaraerobatics@me.com

Can-Am Aerobatic Challenge

July 21 – July 22, 2017

Practice/Registration: July 20
Power: Primary through Unlimited
Location: Cut Bank International Airport (KCTB)
Region: Southeast
Contest Director: Robert Harris
Phone: 503-550-1496
E-Mail: flyhran@aol.com
Website: www.iac27.org

Beaver State Aerobatic Contest (Northwest)

August 11 – August 12, 2017

Practice/Registration: August 9–10
Power: Primary through Unlimited
Glider: Sportsman through Unlimited
Location: Eastern Oregon Regional Airport Pendleton, OR (KPDT)
Region: Northwest
Contest Director: Sean Vanhatten
Phone: 541-480-7456
E-Mail: seanvanhatten@gmail.com

The Bill Thomas U.S.-Canada Aerobatic Challenge (Northeast)

August 10 – August 20, 2017

Practice/Registration: August 17–18
Power: Primary through Unlimited
Location: Olean Municipal Airport Olean, NY (KOLE)
Region: Northeast
Contest Director: Patrick Barrett
Phone: 716-649-8486
E-Mail: cbpbmb@aol.com

Happiness is Delano (Southwest)

September 2 – September 3, 2017

Registration: September 2–3
Power: Primary through Unlimited
Location: City of Delano Municipal Airport, CA (KDL0)
Region: Southwest
Contest Director: Stephen De La Cruz
Primary Phone: 760-963-6426
E-Mail: delanocd@iacchapter26.org

Apple Turnover

September 8 – September 9, 2017

Practice/Registration: September 6–7
Power: Primary through Unlimited
Location: Ephrata Municipal Airport (KEPH)
Region: Northwest
Contest Director: Jerry Riedinger
Primary Phone: 425-985-9469
E-Mail: jriedinger@perkinscoie.com

Ace's High Aerobatic Contest (South Central)

September 9 – September 10, 2017

Practice/Registration: Friday, September 8
Glider: Sportsman through Unlimited
Power: Primary through Unlimited
Location: Newton City (KEWK): Newton, KS
Region: South Central
Contest Director: Ross Schoneboom
E-Mail: schoneboomr@prodigy.net
Website: www.facebook.com/iac119

United States National Aerobatic Championships

September 23 – September 29, 2017

Practice/Registration: Friday, September 22–23
Glider: Sportsman through Unlimited
Power: Primary through Unlimited
Location: Wittman Regional Airport (KOSH): Oshkosh, WI
Region: Mid-America
Contest Director: Gary DeBaun
Phone: 612-810-6783
E-Mail: www.iac.org/nationals

The Clyde Cable Rocky Mountain Aerobatic Contest

October 7 – October 8, 2017

Practice/Registration: October 6
Glider: Sportsman through Advanced
Power: Primary through Advanced
Location: Lamar Municipal Airport (KLAA): Lamar, CO
Region: South Central
Contest Director: Jamie Treat
Primary Phone: 303-304-7937
E-Mail: jamietreat@q.com
Website: <http://www.iac5.org>

The Tequila Cup (Southwest)

November 3 – November 4, 2017

Practice/Registration: November 1–2
Power: Primary through Unlimited
Glider: Sportsman through Advanced
Location: Marana Regional Airport, AZ (KAVQ)
Region: Southwest
Contest Directors: Mark Matticola and Ron Chadwick
Phone: 719-440-1965 (Mark)
Phone: 732-865-1610 (Ron)
E-Mail (Mark): mark.matticola.1@us.af.mil
E-Mail (Ron): bubbaron432@gmail.com
Website: azaerobatics.com



Bailing Out Over Water

Just Pull the Darned Rip Cord

A happy new year to all. The weather in many parts of the country is leaning toward more sun and less snow. It won't be long before you'll be out carving holes in the sky. Now is the time to think about making sure your aircraft and all related equipment have been dusted off and are ready for takeoff. Just as important is to make sure your emergency procedures are also dusted off and reviewed.

My column this month is shorter than most. I would like to think the time saved reading a couple more paragraphs would be better spent by you thinking about and practicing your emergency procedures.

Each of you and your aircraft are unique, and one scenario for survival may work well for someone else and not for you. Now is the time to make sure your escape plan is committed to memory just like many of you have for your family and home in case the unthinkable should happen there.

Now, stepping off that soapbox, I would like to discuss a subject that often comes up with my customers, and that is how do I get stable in free fall, in the event I have to bail out? It's unlikely you're a seasoned sky diver, so let's not confuse getting stable like a sky diver with your immediate need to "Look, Find, Reach" and pull the rip cord.

If everything goes well, and you manage to get clear of your aircraft and pull the rip cord before you make a lasting impression on terra firma, give yourself a pat on the back ... after you land. This is not the image you want to make trying to get stable. I have many articles on my website worth reviewing before you blast off for the upcoming season, but for now I would like to discuss the proper body position once you clear your aircraft.

For the vast majority of you, **getting stable like a sky diver is not going to happen.** Attempting to do so, thinking you need to get stable before pulling the rip cord, will probably have dire consequences. I don't want anyone to make a lasting impression like in Wile E. Coyote cartoons. I hope I made myself clear. Run-

ning out of time and altitude trying to get stable is not an option.

Your parachute knows up from down. All you need to do is give it a chance to open. Would it be better if you were stable? It might help reduce the chance of getting tangled with your parachute or causing some

For the vast majority of you, **getting stable like a sky diver is not going to happen.** Attempting to do so, thinking you need to get stable before pulling the rip cord, will probably have dire consequences. I don't want anyone to make a lasting impression like in Wile E. Coyote cartoons. I hope I made myself clear. Running out of time and altitude trying to get stable is not an option.

type of malfunction, but this is not the time to find out if sky diving is your next adventure. You're quickly running out of options.

Speaking of time, your parachute will need two to three seconds to fully open, going as slow as it will ever go. So, don't spend too much time looking at the scenery. Once clear of your aircraft, find your rip cord and pull it as soon as you can. Remember the distance it takes for your parachute to open (within two to three seconds) will vary depending on the attitude of your aircraft when you bailed out.

I do have a few suggestions to help prevent any problems deploying your parachute. **First**, never take your eyes off the rip cord handle once you've bailed out. The harness may have shifted, making for an even more exciting day locating the rip cord. **Second**, keep your legs tight together. This is especially important for you guys, if you don't want to be speaking in a soprano voice for a couple of weeks. Keeping your legs together will also help prevent your parachute from going between them and possibly entangling with something. **Third**, do not grab any portion of your parachute as it's deploying unless it's caught on something.

Did I mention getting rid of your rip cord handle? It certainly would make a nice souvenir, but the cable could catch on a part of your deploying parachute, preventing it from fully opening. Remember, the opening process happens in a flash. However, if you end up with the rip cord handle fused to your hand after your parachute opens, it will make a nice souvenir. What I would do is hastily stuff it down the front of my flight suit or shirt. If that doesn't work, you could also hang it over your thumb. This way you can still reach up and steer your parachute. You do remember it has steering handles, don't you? If not, have your parachute rigger show them to you at your next repack. Of course you could just toss it away immediately after opening, freeing your hands for better steering. Whatever you decide, do it quickly.

If you hang the rip cord handle on your thumb, it also gives you the option of dropping it as you near the ground, if you find yourself near power lines. A metal rip cord contacting the power lines is not something you want to happen just for the sake of a souvenir. By the way, what are you doing near the power lines? I've told you in previous articles to stay away from them. You never want to land too close to roads where power lines may be found, let alone the vehicular traffic. I can see the headline now: "Pilot makes successful bailout and is run over by car after landing on road."

Have a great flying season, and please consider a bailout seminar.

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MEET A MEMBER

BY Gary DeBaun, IAC 4145

Tommy Suell



IAC #: 438121
Nickname: The Drifter
Occupation: Chief Pilot for Steelman Aviation
Chapter Affiliation: President of Las Vegas IAC Chapter 777
Age: 37

GD: Tommy, your father was instrumental in you becoming a pilot. Tell us a little about your relationship with him.

TS: Yes, my father was a huge influence in my life with aviation. Growing up, my father ran the Kadena Aero Club in Okinawa, Japan. This club was for military personnel to get their private pilot and other certificates for flying. This gave me access to aviation at a young age. He basically had me flying while I was still in my diapers. He sent me off to solo on my 16th birthday and gave me my private pilot certificate. From there he told me I was on my own. As a child, I took things for granted. Unfortunately, he was lost doing what he loved in aviation. It wasn't until I lost him that I realized how lucky I had been to have him as a father, and that my true passion for aviation was up to me to make it happen. Not a day goes by where I don't think about him when I take to the skies.

GD: You have only recently dabbled in aerobatics. What got you interested in competitive aerobatics?

TS: I have always been impressed with all the air show pilots and the skills involved to complete these maneuvers. I always study the movements the pilots use to make the aircraft dance the way they do. I have wanted to be free and do loops and rolls, but unfortunately the only planes that were available at the time were Cessnas, which was a bit frustrating at times. So I practiced loops and rolls on a flight simulator. Even at

that point, I had no clue about competition aerobatics.

GD: When and where was your first contest? How did it go?

TS: My first contest was April 2016 in Apple Valley, California. This was two weeks after I bought my Christen Eagle II. I had zero experience, only what I had read about in aerobatic books or watched on YouTube. I got checked out in my plane and took to the skies. The competition went well for my first completion and not having any experience. I placed last, but I didn't get any hard zeros, and it was a tight battle for the six of us. I did win the first place for First-Time Sportsman Award. I started with Sportsman category because I felt that I would have more fun in this category. For me it was just about getting the most experience I could out of my first event and challenging myself with more maneuvers.

GD: What is your current acro ride? Any changes in the future?

TS: I have an Aviat Christen Eagle II, 1998, 220 hp, AEIO-360, 10-to-1 pistons, and 4-to-1 exhaust. I feel that this is a good starter plane for me. I like the two-seater because I have been able to have instructors fly with me in my plane (as opposed to a rental), which I am more comfortable in and I learn better in. It also allows me to take family and friends for flights and still be competitive when flying solo. As of right now, I am very happy with the plane I have and feel it will serve me well. I still have yet to master this aircraft and haven't come close to flying it at its maximum potential, so there is no needs for upgrades just yet.

GD: Do you have any specific goals in aerobatics?

TS: I would like to compete in the Nationals, perform in air shows, and maybe one day represent Team USA.

GD: What is your favorite figure to fly?

TS: As of right now, torque rolls are my favorite, but I still have a lot to learn. There are many maneuvers that I haven't tried yet, so I'm sure this will change as I learn more. I have been practicing snap rolls recently, which are becoming of more interest to me as I am getting better at them.

GD: Do you have any pre-acro routine, like stretching, yoga, or listening to music?

TS: I stretch before routines, then I mentally fly the routine.

GD: You are relatively new to the IAC. Anything you would like to see changed?

TS: I don't see anything that needs to be changed, but as you said, I am relatively new to the IAC. I am in the process of reviving Las Vegas IAC Chapter 777 since it died out 15 years ago. I feel that there is a better way to promote the chapter by using social media and sharing my passion with the younger generation, because without them, there is no future in aerobatics.

GD: Who in the sport has been an inspiration to you?

TS: Pilots like Rob Holland and Sean D. Tucker have been huge inspirations to me. Watching them fly and studying their moves has always been impressive to me. They are both amazing pilots, and they understand their limits. It takes dedication to become a U.S. national champion multiple times and to become top air show pilots, physically and mentally.

GD: Do you have any interests outside of flying?

TS: Before I started my aerobatic training, I was very active in drifting cars. I did that professionally for four years in the Formula D circuit, which is a judged sport similar to competition aerobatics. Now that I have been training in aerobatics, that is where I focus all my time. For me there isn't really "outside of flying" since flying is also my career. Working as a pilot is a different type of flying than flying aerobatics, but I love both. I enjoy sharing my flying passion with my family and friends. My wife and daughters all have the aviation bug as well, so it is definitely a family affair.

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