

APRIL 2009

# SPORT *Aerobatics*

OFFICIAL MAGAZINE OF THE INTERNATIONAL AEROBATIC CLUB

## Two-Seat Tumbler: *Sbach* 342

- RV Aerobatics
- 2009 Sportsman Sequence Part II
- Aerobatic Scholarships





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# CONTENTS

Jim Koepnick



6

David Blundell



12

Mike Steinbke



18

## FEATURES

### 6 Two-Seat Tumbler

The Sbach 342  
—Budd Davissom

### 12 RV's, Aerobatics & You

—Budd Davissom

### 18 2009 Sportsman Sequence: Part II —Gordon Penner

## COLUMNS

### 3 President's Page

—Vicki Cruse

### 26 CP Aviation's EMT Scholarship

—Eamonn Powers

### 28 Ask Allen

—Allen Silver

### 32 Insurance

—Ryan Birr

## DEPARTMENTS

### 2 Letter from the Editor

### 4 Newsbriefs

### 5 Introduction to Trish Deimer

### 30 Calendar

### 31 Fly Mart & Classifieds

## THE COVER

Philipp Steinbke plies the skies over Oshkosh in his two-seat Sbach 342  
—Photo by Jim Koepnick



## PRESIDENT'S PAGE

by Vicki Cruse • IAC 22968  
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Vicki Cruse

## What Does the IAC Want to Be?

The need to diversify without losing our identity

This issue is one of extremes—from the Unlimited-capable Sbach 342 to the recreational, ubiquitous RV. In the past, the International Aerobatic Club (IAC) hasn't always been an organization of extremes, at least not when looking at diversity within the organization. The IAC was founded by competition pilots for competition pilots. While competition may be the founding father, it shouldn't be the main focus.

Take a look at EAA, the organization started by Paul and Audrey Poberezny. It began as an organization devoted to homebuilt aircraft, and over time it became more diverse with the addition of warbirds, vintage aircraft, the IAC, ultralights, and the National Association of Flight Instructors. In its own way, EAA AirVenture Oshkosh also became more diverse with the addition of exhibitors outside these core groups, such as certified aircraft manufacturers and corporate aircraft. One big issue facing organizations such as EAA is deciding what they want to be.

The IAC also faces this identity crisis. The IAC's identity depends on the perspective of the people of whom you ask the question, "What is IAC?" To some, IAC is a competition organization; to others, it is the aerobatic organization within EAA. And if you ask bystanders watching the air show at AirVenture, they

will likely tell you that the IAC is responsible for the air show; not exactly, but in a way they are right. Most air show pilots today are former IAC competitors.

The question, "What does IAC want to be?" has faced every board that has ever run this organization. The IAC mission statement, revised a few years ago, states that the IAC will "Promote enjoyment, education, and safety among aerobatic enthusiasts and competitors alike in their pursuit of greater personal mastery of flight." Typically mission statements are somewhat vague in order to encompass an expanded vision of an organization. To a competition pilot or a recreational pilot, the statement would be accurate, and no one can argue that aerobatics doesn't expand your personal flight envelope or, said another way, your knowledge of yourself and your machine.

Sometimes competition pilots forget that they came from the recreational side and that they too probably started out being fearful of spins. But they had a yearning to try something different. A competition friend of mine who recently completed some training in a T-33 that included rolls and loops told me that this part of his training

regiment made him realize how he had forgotten about the world of recreational aerobatics.

To fulfill its mission statement, the IAC will need to diversify, but not so much as to risk losing its identity. Clearly the IAC is a competition organization, but it is also a recreational aerobatic organization. More importantly, the IAC needs to promote itself as an education and safety organization; here is where we could do a better job.

*"No one can argue that aerobatics doesn't expand your personal flight envelope."*

In the Newsbriefs section, you'll see the expansion of our relationship with aerobatic flight schools and instructors. Everyone reading this column started flying at a flight school and learned aerobatics either from such a school or from someone who had or yearns to do so in the future. It all starts there, and the IAC can do a much better job of helping those who help us the most.

By the time you read this, the new Aerobatic Schools websites should be up and running.

We don't need to be all things to all people, but we need to be better at the things we do. Without members behind the effort to educate others about the IAC and the opportunities within, nothing will happen. We need your help. ☺

# NEWSBRIEFS

## Mirco Pecorari Paint Scheme Raffle

Once again Mirco Pecorari, the Italian designer behind many well-known paint schemes, has donated a paint scheme to IAC for 2009. Mirco will help with color choices and graphics sent to the paint shop of your choice.

The previous winner of the paint scheme offered in 2007 was Michael Hope of Las Vegas, Nevada. Michael is building an RV-8 and the final paint scheme is shown here.



The raffle will debut at Sun 'n Fun, with tickets available through IAC headquarters and at AirVenture and the U.S. Nationals. Tickets are \$10 each and a maximum of 500 will be sold. The winner will be drawn at the U.S. Nationals banquet on September 25<sup>th</sup>, and need not be present to win. To purchase tickets, please contact IAC at 920.426.6574. Examples of Mirco's work may be found at [www.AircraftStudioDesign.com](http://www.AircraftStudioDesign.com).

## Aerobatic Scholarships Available

Two IAC Chapters and one flight school are offering scholarships for aerobatic flight training. IAC Chapter 34's (Ohio) scholarship will be awarded to help advance the recipient's piloting skills by making payment toward training costs in an approved beginning aerobatic course. IAC Chapter 78 (Minnesota) awards the Doug Yost Memorial Scholarship each year. Each recipient of this scholarship will receive a complete course of aerobatics and stall-spin awareness training of approximately ten flight hours. And CP Aviation in Santa Paula, California sponsors a scholarship for the complete Emergency Maneuver Training course. Additional aerobatic training scholarships are available through the International Council of Air Shows. Information on all of these scholarships may be found at [www.iac.org/programs/scholarships/](http://www.iac.org/programs/scholarships/).

## Contest Directors, Registrars, and Tech Inspectors Please Note

To avoid any confusion, or possible misinterpretation of the rules regarding competition by Light Sport Aircraft (LSA), please note the following:

A pilot holding a Sport Pilot certificate, or higher (e.g., Private, Commercial, etc.), does NOT require a FAA medical certificate IF they are flying a LSA. Sport pilots may compete with only a U.S. driver's license, which complies with the restrictions set forth in the applicable sections of the FAR's.

If any questions arise as to whether a legacy aircraft (primarily Taylorcraft and Cubs in IAC competition) is classified as a LSA, a complete list of legacy LSA's may be found at: [http://www.faa.gov/aircraft/gen\\_av/light\\_sport/media/existing\\_models.pdf](http://www.faa.gov/aircraft/gen_av/light_sport/media/existing_models.pdf).

Brian Howard  
Chairman, IAC Rules Committee

## IAC Partners with Aerobatic Flight Schools

Recognizing the importance of aerobatic flight schools, IAC is making a concerted effort to offer its support to the nation's flight schools and flight instructors. Miriam Levin of Suffern, New York was recently named the IAC Aerobatic Flight Schools Manager. She will be contacting each flight school currently listed on the IAC web site to update contact and service information. Ultimately IAC will offer a searchable database of the flight schools and services offered.

It will be searchable by location and services offered. In addition, a page will be added with resources available for flight schools and students, including teaching aids and instructional articles from previous issues of Sport Aerobatics. <http://www.aerobaticsusa.org/schools/>

## Sun 'n Fun Member Dinner

There will be an IAC member dinner at Sun 'n Fun on Thursday, April 23rd at 6pm. In addition, the Curtis Pitts Memorial Trophy will be awarded for the first time. We hope to see you there!

# An Introduction to the IAC's New Manager

Patricia Deimer

You could say that aviation has been in my blood since the beginning; I just didn't "feel" it until I settled here in Oshkosh in 2001.

One of my first memories from childhood is sitting in the back seat of an airplane my dad was flying. Mom says I couldn't possibly remember this, because I was in a car seat, but I do...mostly because we were avoiding a thunderstorm.

When I was young, my family went to all the local air shows, and I remember being awed by the aerobatics and the warbirds. I built rubber band powered balsa wood airplanes and even a wind tunnel with Dad.

It wasn't until I met my future husband while in college that I really got a chance to embrace my aviation roots. Gregg soloed at 16 and got his private ticket as soon as he turned 17. On one of our first dates, he took me flying in a Cessna 152. Later, he took me to my first AirVenture.

We moved to Oshkosh when Gregg got a job in EAA's IT department. A few months later, I started working part-time in the museum. I moved through the ranks, working in Young Eagles and then Flight Operations. For the last five years, I've been with the National Association of Flight Instructors, most recently as its program manager.

I've met some amazing people and learned much during my time here. Things like without volunteers, life at EAA would



*"This new facet of aviation is a very exciting prospect to me..."*

be much different, and that flight instructors are one of the hardest-working and nicest groups of people I've had the pleasure of working with.

Learning to fly had been in my mind for a very long time, but the money expenditure was always an issue. Gregg and I were 7-KCAB for a couple years until we traded that for a clipped Cub in 2006.

During AirVenture 2007, Gregg lost a two-year battle with cancer. It was during a memorial flight in the Cub on the last day of the air show that I knew it was finally my time. Recently, I started taking flight lessons. With the onset of the Wisconsin six-month winter, I changed my focus to studying for my written with a goal of the private pilot certificate.

As I start the transition into this new role, I have much to learn. This new facet of aviation is a very exciting prospect to me, and I look forward to meeting and hearing from you. I look forward to being educated by the IAC membership. I look forward to becoming enamored by this new group of people, volunteers, and their specialty.

Know that my door (telephone, e-mail) is always open here in Oshkosh, so don't be bashful. I am eager to hear from you.

*tdeimer@eaa.org • Tel. 920.426.6574*



Jim Kopnick





Budd Davisson

## The newest, nimble *g*-machine

**P**hilipp Steinbach, he of the flowing red hair and ever-present grin, is a little depressing to be around. Here he is, barely 30, and he has already designed, tested, and produced one of the more impressive single-place competition airplanes anyone has seen in a long time. Then, in what seems like a matter of minutes, he cranked out a two-place bird that, in some ways, is better than the single-place machine. Like we said, depressing. He makes us mere mortals feel like gross underachievers. If he wasn't so likable, you could hate him. But, you'd never hate his airplanes.

**F**or those who missed our report on the single-place SBach 300 (*Sport Aerobatics*, June 2008), we can summarize it in several short phrases: state-of-the-art composites combined with stunning attention to detail, stirred together with gobs of horsepower, vision-blurring performance, and special attention paid to ergonomics and pilot comfort. It is, as is Philipp Steinbach himself, very much "now." It is of this generation with little tradition showing.

And then the SB 342 two-place debuted at Oshkosh.

"The decision on whether we should build a two-place or not," Philipp explains, "was made by the marketplace. All you have to do is look at the sales of something like the Extras, and it's 10-to-one, two-place versus single-place."

When he and his team designed and built the 342, he was building on his experience as an aerobatic pilot (German National Unlimited Champion in the SB 300) and an aircraft manufacturer (XtremeAir GmbH). Add to that what he had learned about the aerobatic marketplace with the single-place airplane and what U.S. SBach distributor (SloAir) Kevin Eldredge was telling him. This meant he didn't want to offer a dumbed-down version of the single-place. If anything, he wanted the new bird to be better. And it had to be comfortable.

"We wanted this to be a true two-place airplane," Steinbach says. "Not a single-place with an extra seat wedged into the fuselage. So, we designed the cockpit area first. This included moving the rear pilot back 6 inches and raising him an inch and a half from the 300's position and raising the canopy to match. This gave both pilots much more headroom. Then we positioned the cockpit section fore and aft on the wing in such a way that we could have both seats full, carry a hundred pounds of baggage, and still fill the 74-gallon tanks. We really wanted to make this a useful airplane, not just an acrobatic one. At the same time, we didn't want to compromise on the acrobatic capabilities either."



Easy access is gained through a huge cockpit opening.

Since the Wright brothers' time, it has been accepted that the aeronautical design process, from beginning to end, is a series of cannibalistic compromises. Nothing is ever perfect. That, however, was before composites, computers, and young, seemingly idealistic designers like Philipp. His generation still has to deal with compromises, but the airframe material (composites), computers, and much more experience allows them to optimize everything as much as possible, which keeps the compromises to a minimum. They can have their cake and, if not eat it too, at least nibble on it. The best of both worlds, etc., etc....

"We designed the airframe for stiffness, not just strength, which results in an overall limit over 30 g's (*editor's note: that's not a typo—30 g's!*) with great fatigue resistance, while still being quite light. In Germany we have test samples of the materials that have been going through fatigue tests for over 30 years, but inside they appear as good as new. In addition, we tested the carry-through bolts in a high-salt environment to make sure they couldn't be compromised. In this airplane, the pilot is very much the weakest part."

Integral to pilot efficiency and ergonomics in any airplane is the design of the seats, which is another hot button for Philipp.

"The seats are reclined 30 degrees, which I, personally, think is about the maximum. Any more than that and I start feeling the stresses in my neck. The seat pan is very ergonomic with good back support and is designed for a straight backpack parachute, not a wedge. The seat bottoms are comfort foam. In both hard aerobatics and cross-country cruising, the seats are really comfortable."

As part of the airplane's multi-mission capabilities, he says it's capable of cruising at 10,000 feet at an honest 200-205 knots true (as proven on the 4,000-nautical-mile ferry from SLO to OSH and back to SLO) at 14 to 15 gallons an hour. So, you have at least four hours of cruising or 800 nautical miles.

"The instrument panels," Philipp says, "are attached to the airframe and don't rotate up with the canopy as on the 300, and both are large enough to accommodate most instrument packages. In the 300, the rotating panel gives room to access the fuel system and rudder pedals, but the huge cockpit opening of the 342 does not need these tricks; everything is very easily accessible."

It has been designed for ease of assembly, disassembly.

"When we went to Japan for the Haute Voltige World Grand Prix in November," continues Philipp, "we needed two hours with two people to assemble each plane. So the 300 and 342 were easily ready to fly within half a day. Disassembly was the same time."

As with the rest of the airplane, the smoke system has also received some nice innovative features.

"The smoke tank is clear," says Philipp, "so you can monitor it, and it has a quick disconnect for filling. You plug in the line for the smoke oil and turn on the smoke pump, and it pulls oil in from the drum. It's all self-contained and very clean. It's impossible to spill the oil."

Even the brake system is something different.

"We use Beringer brakes from France," Philipp says. "They are light, only two pounds per side and are double-puck units. That saves a total of 6 pounds, and it is very hard to save 6 pounds in a carbon structure, so that is a major saving. Plus they are ABS units, so you don't have

to worry about both pilots getting on the brakes at the same time and picking up the tail."

Although serious aerobatic types don't usually worry about things like navigation lights, those going cross-country do, and to this end, Philipp has aimed technology at the problem and solved it in the lightest (pun intended) way possible.

"The nav lights are faired into the wingtips, and the rudder has a clear section for the collision light, which is a 30,000-hour LED unit drawing only 1.5 amps, but is easily twice as bright as the usual aircraft strobe."

Equipped with a Lycoming AEIO-580 putting out 315 hp right out of the factory, the airplane can't help but perform.

"The rate of climb at full gross is 2,600 feet per minute," says Philipp. "Of course, when doing aerobatics solo, with just the 19-gallon acrobatic tank used, the climb rate is much higher. Also, it sits on the ground at a higher deck angle than the single-place, approximately 8.5 degrees, so it takes off very quickly. The roll rate and most of its aerobatic capabilities are the same as the single-place."

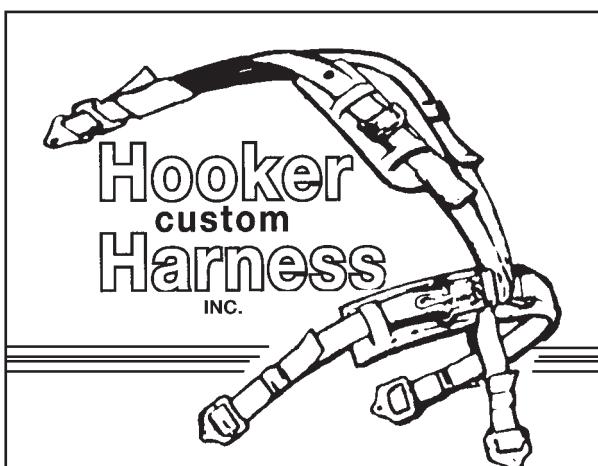
"The fuselage is a total of 11 inches longer and, combined with some minor control surface tweaking, really helps the airplane when doing gyroscopics. It has a bigger sweet spot, so it's easier to tumble. In general, we're very, very pleased with the airplane, as it is capable of competing with the best aerobatic airplanes in the world, even though it is two-place. Vice World Champion Renaud Ecale from France has flown the 300 to victory in the Haute Voltige World Grand Prix freestyle to music competition in Japan, and he told us it has more potential than the competition's ships. He also flew the 342 and told me he'd fly Unlimited competition as it is. So, yes, we're very pleased."

It's always exciting when an airplane is introduced, but we all know we have to see what the market says before making any pronouncements as to its success. This is a tough economic environment in which to be producing a new airplane, but it seems that those who want the best, find a way of affording it. With all of Philipp's innovations and aeronautical creativity shown in the SB 342, we certainly expect it to do well. 



Jim Koepnick

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# Flying the Sbach 342

by Carl Pascarell

**E**ntry into the 342's cockpit is easy owing to the low wing, throw-over canopy, and "step anywhere" interior. Thus one foot up on the wing root and in the cockpit you go. Settling in the airplane, at first, feels somewhat "Sukhoi-ish"—ergonomically speaking, that is. This due to the "off the floor" rudder pedals, semi-reclined wraparound seat, and large S-shaped control stick extending to chest high. Strapped in and with the canopy closed, you get a definite sense of being molded to the airframe—like you quite literally strap the airplane on and become a part of it.

The engine start offers no surprises, and soon we're taxiing to the runway's end. By the way, taxiing (and engine start for that matter) can be accomplished with the canopy open. This is a significant and much-appreciated design feature—especially for those of us tired of sweating out the Florida summers under our closed Pitts/Extra canopies.

Visibility over the nose during taxi is good and typical of the genre, although the occasional S-turn seems still to be a good idea. Mags and prop cycle, canopy, harness, fuel and control check, and we're ready to go. Powering up, the lightweight MT takes the power as quick as you can push the throttle in, and even with two people on board and one-half fuel, acceleration during the takeoff roll is excellent. Directional control was a "nonevent" as the airplane slipped down the runway with no tendency to "dart" left or right, even when directionally abused or overcontrolled.

The tail comes up on its own and assumes an attitude that allows liftoff almost before you're ready. Once off the ground and accelerating, the airplane feels instantly comfortable. Solid and steady, it was easy to hold it low during the ground effect acceleration with no tendency toward pilot-induced-oscillation (PIO) around any axis. One hundred sixty knots by the end of the 3,500-foot runway says all you need to say about power to weight, and the soaring chandelle to 3,000 feet was an exciting indicator of how that power to weight translates into vertical performance maneuvering.

Flat out in level flight, the airplane ran out to 210 knots indicated airspeed (KIAS). In the smooth air, the airplane "grooved" as if on rails. And flying big lazy swooping wingovers and low "g" overheads was an effortless affair of fingertip control with almost no rudder required to coordinate. Heavier maneuvering was equally pleasant, owing to the Sbach's low-stick forces and well-balanced control response to input ratios.

*... pilots of every caliber will find the Sbach 342 an exciting challenge in three dimensions ..."*

As loaded, the airplane seemed balanced very near the neutral point, so that almost no trimming was required throughout its operating range. Electric trim is supplied, however, and comes in handy for fine-tuning during cross-country flight and when balanced closer to the center of gravity's forward limit.

Generally speaking, the pitch characteristics are very nice, light but not "pitchy," and despite the almost neutral longitudinal stability, the airplane seemed more than willing to stay where it was pointed, particularly when in the vertical. Lateral stability is

weak but positive (that's a good thing), allowing some measure of wings-level stability. As a consequence, it makes for relatively easy cross-country flying while at the same time maintaining the airplane's excellent roll maneuverability.

As expected, control around all axes is more than abundantly available. The huge ailerons and the low-rolling inertia (the wing, including ailerons, weighs a mere 160 pounds) offer tremendous roll accelerations and rates (nearly 400 degrees/second). Breakout forces are just about perfect, and centering/roll stop, even at maximum deflections, is exceptional. Stops are sharp and easily controlled on point, while control forces after breakout are

Serious Attitude Adjustment ... for Two

constant and relatively modest out to near full deflection. Also, motion around the roll axis is well separated from other axes, allowing more "pure" rolling with very little coupling evident in either yaw or pitch. Hence, rapid series rolls are clean and well-behaved, requiring little or no attention to the rudders to hold the airplane on line.

The ample elevator and well-chosen airfoil section allow tremendous pitch authority at virtually any speed. The "G" available at the slower speeds, in particular, is spectacular; both pushing and pulling and tight, minimum-radius corners and humpties can be flown with almost comical pitch rates and absurdly small radii.

Okay, on to snap-rolls. Generally speaking, I don't like them. I don't do them a lot, and I generally avoid analyzing them. But, I have to say...I had a great time playing with them in the Sbach. Maybe my natural sense of them matched the optimum Sbach technique, I don't know. I'm the first to admit I don't know many of their subtleties. But, double snaps, triples at the top of loops, and outside one-and-a-halves all broke sharp, rotated clean, and stopped on a dime (not always where I wanted them to, but sharp nevertheless). Just two inches of stick input and one-half rudder seems to produce the best results. I didn't snap above 130 knots, although all indications are an even quicker, sharper snap. As in most planes, the snap performance degrades markedly if buried (too much elevator), but significantly, the Sbach has a larger than normal "sweet spot," allowing less adept snap rollers (like me) to look like a pro.



Jim Koepnick

Once off the ground, the airplane feels instantly comfortable.

Vertical performance is, as you might expect, tremendous, and penetration from cruise speed is very good (2,200 feet) and almost "box limited" when pulling up from its generous 225-knot redline (2,600 feet). Topping out in the vertical, the hang time seems a virtual hover, while any tendency to torque prior to the hammerhead is easily controlled with just a little aileron. The pivot is rapid and precisely stoppable on the vertical downline with little tendency to "pendulum."

In summary, pilots of every caliber will find the Sbach 342 an exciting challenge in three dimensions—a versatile platform capable of fulfilling even the most hardcore acronaut's every passion. It is confidence-inspiring, rock-solid, and its awesome controllability is easily adapted to with minimal practice. Flown hard or soft, fast or slow, it makes you look good. Rarely does an airplane so capable, so high performance, instill an almost immediate sense of confidence and comfort in the pilot. Micro loops, knife spins, and exotic tumbles of every persuasion are yours for the asking. Even the landing is a ho-hum affair.

Having said that, the Sbach 342 is an airplane few pilots will ever outgrow. It embodies tremendous potential and is equally adept as an adrenalin junkie's personal "g" machine, as well as a supremely capable Unlimited trainer.



Courtesy Philipp Steinbach

The 342 was recently repainted with a design by Mirco Pecorari of Aircraftstudiodesign.com

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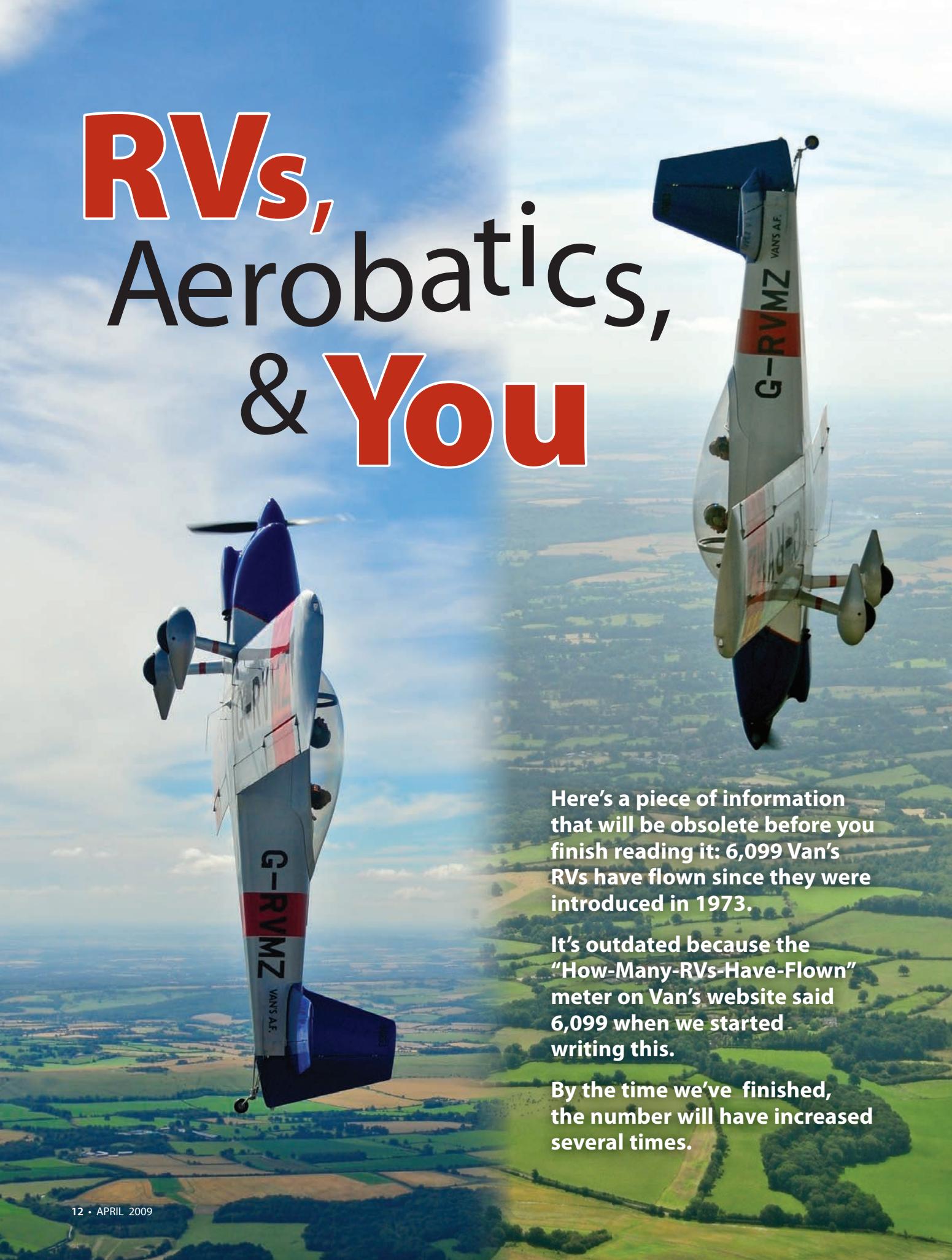
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# RVs, Aerobatics, & You



Here's a piece of information that will be obsolete before you finish reading it: 6,099 Van's RVs have flown since they were introduced in 1973.

It's outdated because the "How-Many-RVs-Have-Flown" meter on Van's website said 6,099 when we started writing this.

By the time we've finished, the number will have increased several times.

Budd Davisson, photos by David and Zan Blundell

**J**ust knowing that 6,100-plus amateur-built airplanes of any kind have taken to the air says a lot about that airplane. It says that the basic design is excellent and easy to fly, because the market weeds out products it doesn't like; there's a very Darwinian aspect to product survival in the marketplace, and only the strong make it. The astounding number built also says that it's a pleasant-looking airplane (pilots don't like being seen in ugly airplanes), but more important, it says that the builders' support from the company is well above average. In short, for a product to be successful in any market, but especially in the homebuilt airplane market, it has to be a good product that tickles your emotions and has a good company behind it. And that pretty well sums up Dick VanGrunsven's RV family. Oh, yeah, one other thing—all but a few of his airplanes are designed to Federal Aviation Administration (FAA) aerobatic category standards. So, what we have here is a huge repository of aerobatic airplanes and their pilots, who may or may not be aerobatic pilots, even though their airplanes are very definitely aerobatic-capable.

### Finding Instruction

Of course, given the mindset of those reading this, the obvious question has to be, "What good is having a sprightly handling mini-fighter stressed to aerobatic limits (+6/-3) if you don't know how to aerobat it?" And there, in a single sentence, is part of the rationale behind the International Aerobatic Club (IAC) deciding to put together a database of instructors who are willing to give dual aerobatic instruction in RVs. The concept is that a lot of new owners and builders are going to want to aerobat the airplane, and self-education in a slippery, high-speed bird like the RV can be a bad thing, sometimes, a very bad thing. There is simply no substitute for getting instruction in any airplane, but especially in aerobatic airplanes such as the RV, because its nose-down speed potential is much higher than the airplanes many aerobatic pilots fly (Citabria, etc.). So, safety was one of the reasons why the IAC got on the RV bandwagon: It wanted to help those RV owners who want to safely spend an afternoon looping and rolling, as well as offering guidance to those who actually want to compete in the airplane, as many already do.

"We have already had a number of RV pilots enter IAC events to compete in Primary and Sportsman," says IAC board member and competition pilot Tom Adams. "Just last week a group of RV guys, here in the Tennessee area, met with some of us IACers to find out how they could get involved. They want to expand the areas in which they fly their machines. I would guess maybe one in 10 want to fly competition, while most we

spoke to want to fly Sunday morning loops and rolls just to enjoy the machine."

In order to accommodate this new facet of aerobatic instruction, the IAC is updating the "IAC Acro Flight School" portion of its website.

"When that is completed," continues Adams, "the schools that want to teach aerobatics to RV owners in their own airplanes will be listed as such. Any RV owner who wishes to learn more about basic, safe aerobatics will be able to find out where to go for help."

Tom says they already have a sizable number of aerobatic certificated flight instructors (CFIs) signed up for the RV program. One of those is Steve Johnson, an Advanced competitor and aerobatic CFI based in Nashville ([www.StuntPlane.com](http://www.StuntPlane.com)).

"All the RV training I have done has been in RV-6s and -7s," says Johnson, "which I think is only because those are the most popular models in my area. I have done acro in an RV-4 and RV-10, but only because the owner wanted it done for his logbook, so his airplane would be officially approved for aerobatics."

It should be pointed out that not all RVs are designed to the +6/-3 aerobatic limits, although most are. Early RV-3s, for instance, must have their wings updated to the RV-3B configuration, which includes a new spar. The update kit is included in Van's catalog of neat toys.

"I am the local aerobatic instructor in middle Tennessee," remarks Johnson. "I had several RV pilots ask about getting acro training in their airplanes, so we did. It grew from there into my doing the initial acro flights during the Phase I testing of their amateur-built aircraft."



Tom Adams asked Johnson to meet with RV pilots, teach them about the IAC, show them how to find competent aerobatic training, and then brief them on flying in competition. This work culminated in an RV aerobatic contest in Texas that was featured in a 2008 article of *Sport Aerobatics*.



"We have already had a number of RV pilots enter IAC events to compete in Primary and Sportsman . . ."

"That article got a lot of attention," says Johnson. "Tom has contacted the listed IAC aerobatic schools about their willingness to train pilots in RV aircraft, and there was a good, generally 'yes,' response. Some schools want to start the training in a Decathlon, or similar airplane, and then transition into the RV. I don't have that luxury, so I start in the RV, after I do a very thorough technical inspection of the aircraft."

### **Knowing the Limits**

Per Van's website for RV-4s, -6s, -7s, and -8s, the g limits are +6/-3. Johnson has never exceeded these limits in flight training and has never really gone more than +5 and -1g's.

"The g limits, in my opinion, are fine for Intermediate," continues Johnson, "though I have not yet flown an RV airframe with inverted systems. I have snapped an RV but not purposely at speed. The snaps have all been at the tops of loops when the student pulled too hard. I have only taught Sportsman-level figures. The accidental snaps at the top do want to develop into a spin, but if power is pulled, and controls neutralized, the spin does not develop."

"I flew an RV-8 in Intermediate for a season," says RV competition pilot Lew Shattuck. "It did just fine, although I was cognizant of the g limitations all the time. I'm not sure, given the latest Intermediate requirements, that one would be well-advised to fly that category because of the

negative g limits of the machine. It could probably be done, but there's not much room for error. On the other hand, I believe any of the RVs would be fine in the Sportsman category."

Steve Johnson says his biggest concern is the well-known speed potential of the RV in aerobatics.

"These airplanes accelerate quickly," says Johnson. "If throttle is not pulled or managed appropriately, the  $V_{NE}$  or g limits can be exceeded. I fly Advanced level competition, so I have no problem with the energy management issues, but a student can get behind in a hurry in nose-down situations, such as on the backside of a loop. Any downhill flight must be managed well to prevent exceeding  $V_{NE}$ . Pulling the throttle works great if it is used."

For spins, whether solo or dual, Johnson flies with full tanks in order to keep the center of gravity (CG) forward. Spin rotation in this configuration is fast, with a 40- to 60-degree nose-down attitude.

"I have done three turns in RV-4s, -6s, and -7s, both directions upright," says Johnson. "The rudder has plenty of authority throughout the spin with strong feedback against your feet. Stops can be competitive style, but must be practiced a lot to stop on a good heading. Without competition-style practice, the spins stop fine, but not on heading. The elevator has good authority in spins, as well, though I have not tried any accelerated spins or outside spins. All of the RVs I have flown have been other people's airplanes, so I have not had the opportunity to try more advanced figures."

Johnson says spin entries, even with full fuel to move the CG forward are easy, but not excessively so. With good footwork, you can hold the stall with no spin, but if you have a wing down, or the ball out, it will want to spin. For incipient spins, the Beggs / Muller system (power idle, hands-off stick, rudder opposite spin) works fine. He hasn't tried Beggs / Muller for fully developed spins, but the normal opposite-rudder and then forward-stick recovery method works well through three turns.

"Students often ask me how many hours it's going to take to make them safe while doing acro," Johnson says. "Not knowing them, it's hard to give an exact answer. I would say it takes at least five hours to be safe during acro, maybe more for competition. It takes a while to get the pilot far enough ahead of the airplane to manage the energy on downlines."

Stick forces are light, about like a Pitts S-2B, but with less roll or pitch rate with deflection. Accelerated stalls do occur but are not bad. Under power, the left wing will drop, but if you let off on the stick, flow reattaches fast. There are no sight devices designed for RVs yet, so setting lines can be hard—there are no good sight pictures through the big bubble canopy.

"All of my instruction has been Sportsman level," continues Johnson. "We start with rolls and then loops. Once we have loops down, I start the spin training, but spins are easy to prevent. I have been able to talk all students through hammerheads and Immelmanns without inadvertent spins. I also do competition-style spin training for students who want it. The one thing I emphasize



is safety though altitude. Most of my lessons are in the 4,000- to 7,000-foot range with the field at 500 feet mean sea level. Once a student is competent, I will bring him down to Sportsman acro altitudes."

### Your RV

One of the concerns instructors have about taking on a student in a homebuilt airplane is that they don't know for sure how well the airplane was constructed. Steve has his own approach to that problem.

"Fortunately, RVs can be easily inspected by removing the cowling, tail fairing, and aft baggage compartment bulkhead," says Johnson. "I do this inspection for all first-time RV flights. While I have seen some poorly built RVs, I have not yet had a poorly built aircraft offered to

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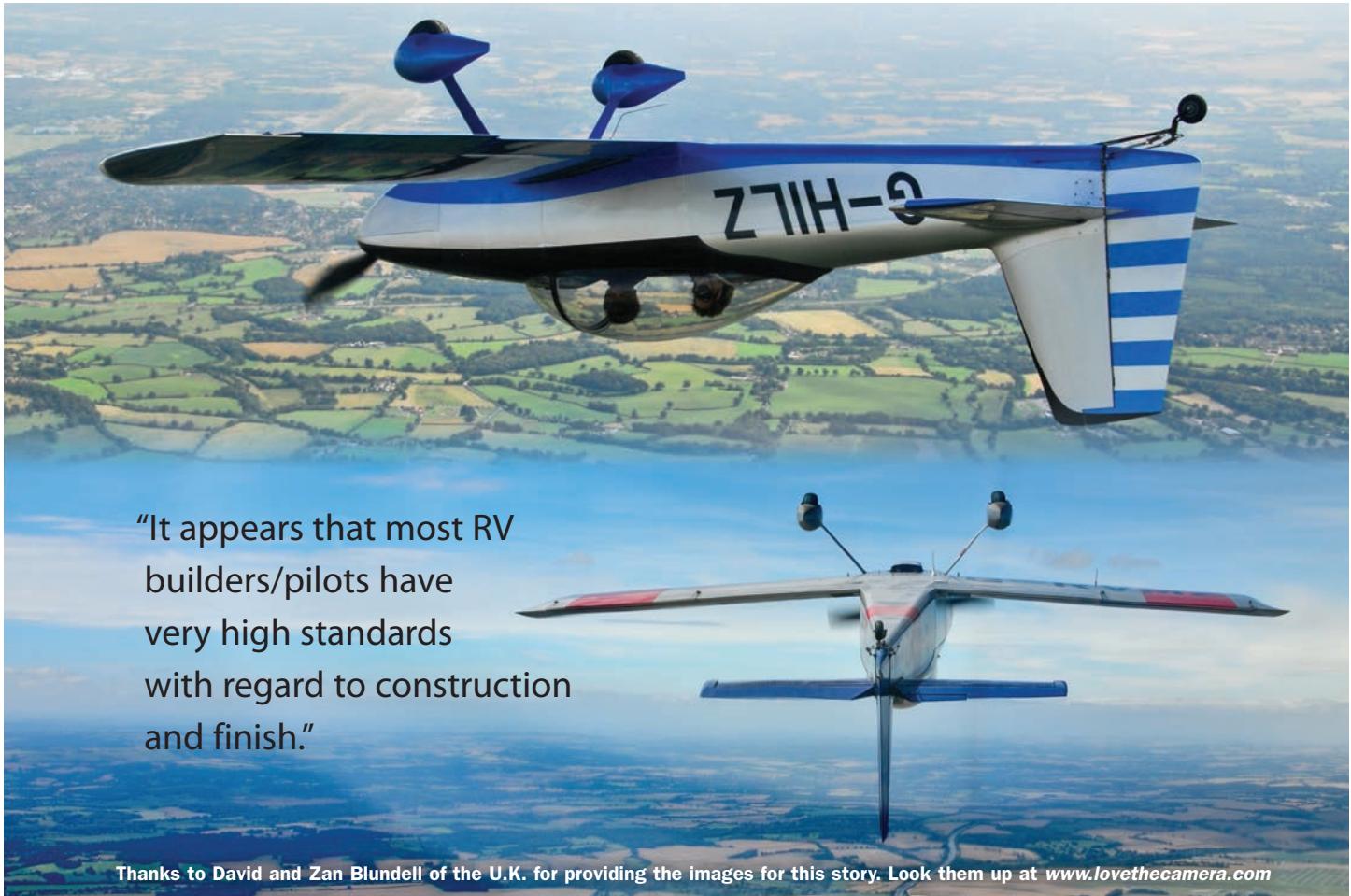
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**"It appears that most RV builders/pilots have very high standards with regard to construction and finish."**

Thanks to David and Zan Blundell of the U.K. for providing the images for this story. Look them up at [www.lovethecamera.com](http://www.lovethecamera.com)

me for acro training. I have not found any problems in aircraft regarding aircraft differences or quality of construction. It appears that most RV builders/pilots have very high standards with regard to construction and finish."

Inasmuch as there is always a large number of used RVs on the market, it goes without saying that if a person is intending on doing any aerobatics in their new purchase, a very detailed prebuy inspection is in order. This should always be the case when buying a new airplane, but in this case, where the pilot will be subjecting it to higher than normal loads, it's vitally important they know the structure was put together the way Van's intended.

Since RVs are often equipped to do serious cross-countries, their instrument panels aren't the stripped-down versions many aerobatic birds tend to use.

"Most RVs I have flown have gyro panels of some sort," says Johnson. "If the gyros are traditional, mechanical gyros, I explain that acro may damage them. Some owners/pilots have not cared about this or have had all solid-state gyros with no moving parts, so we continue on with the training. Some of those with mechanical gyros have limited themselves to "Sunday afternoon" loops and rolls. This means more gentle inputs and less overall training time for the student."

The problem of fitting normal-sized pilots and parachutes into little airplanes has haunted aerobatic pilots for years, but modern parachute manufacturers have come to our rescue.

"I use a Long Softie," says Johnson, "But any newer, thinner backpack would work well. The seat backs are easily adjustable on the stock RVs, and removal of the upholstered seat back cushion is just a matter of pulling it out. This has comfortably given me enough room for the parachute and myself. I don't think a seat pack would work, as there is not much depth to the seat pan, but a very thin seat pack might work for smaller pilots."

With so many RVs out there, many view this abundance as a vast untapped source of not only future aerobatic pilots but a lot of fun-flying as well. However, it has to be approached correctly, and certainly flight instruction is the first step.

"Obviously, the IAC would like to increase its membership," says Tom Adams. "That being said, our primary concern is offering the RV people, who want to fly acro, a venue where they can find instruction that will allow them to do that safely. Let's face it, as we've said repeatedly, the RV can be a fast and slippery acro mount. But with even minimal instruction, it can be as safe as any other airplane in aerobatics."

The service the IAC is developing for the RV community is coming at the right time, and the whole of sport aviation will benefit from the increased level of safety, proficiency, and fun that will result from their new program. So corral the RV owner on your street (every street has at least one), and invite him or her into the IAC. These RV owners will never regret being exposed to instruction that is tailored specifically to their airplane. ☺

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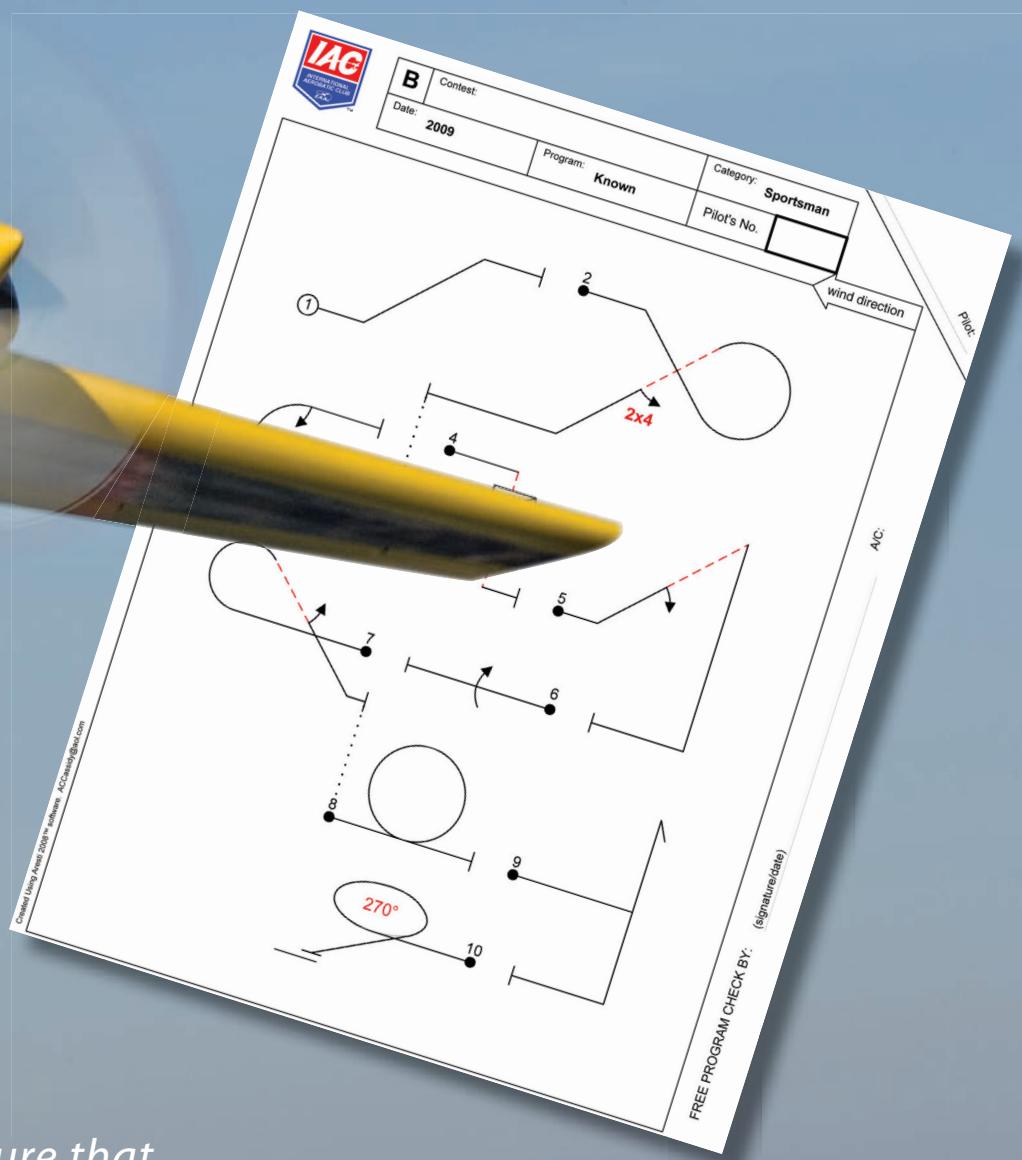
# The 2009 Sportsman

## Known Sequence



*Gordon K. Penner,  
MCFI-Aerobatic, FAA Gold Seal Instructor*

**Part II of a  
Two-Part Series**



*"Every figure that requires high entry energy is preceded by a figure that accommodates an exchange of altitude for energy."*

"A well-designed Sportsman sequence should accommodate energy management with the right hand rather than the left."

In the "big picture view" of the sequence Giles said, "It starts with a 45 upline to announce the sequence with a little noise to get the attention of the judges. The sequence has a pushdown gold fish that levels the playing field and does not give the high horsepower aircraft the unfair advantage of a pull-up gold fish. Every figure that requires high entry energy is preceded by a figure that accommodates an exchange of altitude for energy. Smooth energy flow throughout the sequence is of course an essential requirement for the low powered, high drag aircraft. Downwind loops and hammerheads are avoided. Energy costly mid-sequence turns are avoided."

Last time, we left off with the spin. Again, new people have difficulty making themselves add full power on the downlines, but it must be done. Especially for those in low-horsepower/high-drag airplanes, energy will be needed for the next maneuver:

#### MANEUVER NO. 5:

##### Reverse Wedge or Sawtooth

The reverse wedge works well with low-horsepower/high-drag airplanes, assuming they can dive at the end of the previous figure to get enough energy. The regular wedge *does not*. Giles himself, in his clipped-wing Cub, has learned this the hard way. (See the April 2007 *Sport Aerobatics* article "Thirteen Seconds.")

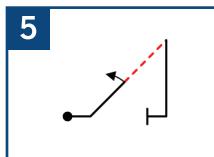
With enough energy as the pull to 45 degrees is initiated, a well-scoring half-roll can be done and there will still be enough energy to make an appropriate radius at the top. Don't pinch it.

The common problem for new people, besides not making that top radius a radius, is those darn 45s and centering the roll. As for centering the roll, until ground coaching helps you make an adjustment, make the line before and the line after the roll equal in *time*. Judge perception will usually see equal time as an equal distance flown. It is a place to start. Later, with coaching, you will find that you'll need to spend slightly longer on the slower line (after the roll) than the faster line (before the roll) to make them equal in *distance*, but the timing difference is not a 2 for 1 ratio.

As for the 45s, they must not only be at an actual 45-degree angle, but they must also have the same angle before, during, and after the roll. See the Aileron Roll section below about this.

#### MANEUVER NO. 6: Aileron Roll

In Aresti language we call it the aileron roll, but it is really the slow roll. We do not pitch up first. Slow rolls are one of the harder things to teach in the basic aerobatics course. Luckily, all airplanes will be



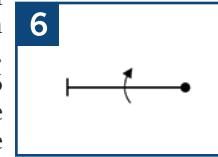
screaming into the roll with bags full of speed acquired from the exit from the reverse wedge, which makes it easier to fly.

The main problem in this maneuver is that people do not maintain the straight and level path before, during, and after the roll. Sinking during the roll is quite common, especially in the inverted and second knife-edge portions of the roll. Another problem is not maintaining a constant roll rate. People also end up off heading, usually to the right in a left roll.

The key to a good slow roll is picking a spot on the horizon and then drawing Alan Cassidy's "sacred circle" with the tip of the nose around that spot. If we consider a left roll, the tip of the nose starts at 6 o'clock, rotates counterclockwise up to 3 o'clock for the first knife-edge, continues up to 12 o'clock when inverted, down to 9 o'clock, then back to 6 o'clock. The controls must be manipulated in such a way to fly that circle with the tip of the nose around that point on the horizon.

Airplanes with a high angle of incidence need a higher nose attitude when inverted at the 12 o'clock position on the sacred circle. That makes the sacred circle tall at the 12 o'clock point, which is why I sometimes call the sacred circle the "sacred egg." To find this attitude the pilot must fly inverted at different speeds and see how high the nose has to be above the horizon while holding an altitude.

When rolling past 3 o'clock on the sacred circle, there must be enough push to get the nose up to the correct inverted attitude. Blend this push in. Don't try to put the push in all at once at 12 o'clock, or you may get an inverted stall or mush, especially in the Citabria.

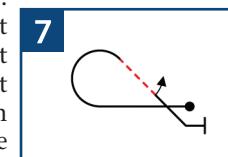


Enough knife-edge practice must be flown to determine how much top rudder must be held to maintain altitude at the selected speeds. Since an aircraft in a slow roll is basically in a slip, it is losing energy throughout. That is why the second knife-edge always takes a little more top rudder than the first one.

A good trick taught to me was to not switch the rudders (when switching to the "other" top rudder) when passing through 12 o'clock, but to wait until about the 10:30 position. Together with that, as it says in Alan Cassidy's book *Better Aerobatics*, a little push about the same time as the feet are switched (10:30) will also keep the nose pointed in the right direction as the rolling motion continues, rounding out the second half of the "sacred circle." Additionally, once the rudder pedals are switched the roll rate will increase, which is a downgrade. Ease off the aileron deflection a bit when the rudder pedals are switched so the roll rate stays the same.

#### MANEUVER NO. 7: Half-Cuban-Eight

Most of the elements of this maneuver have been previously covered. Don't pinch the top of the loop, which is a downgrade. The roll must be centered. Get coaching to get the angle right on your 45-degree lines, and make sure the angle is maintained before, during, and after the roll. Also, the entry and exit altitudes do not have to be the same.



#### MANEUVER NO. 8: Loop

We fly the loop in thirds, but we must analyze it in quarters. Quarter one is free and sets the standard. Whatever radius is drawn in quarter one must be re-created in quarters two, three,

and four. Quarters two and three are the hardest, with three being "the downgrade zone."

The first key, especially in a low-performance airplane, is to not make the loop too big. You don't have enough horsepower to make it all the way around otherwise. It is very important to pull enough  $g$  in the first quarter, between  $3g$  and  $4.5g$  for you nonslick monoplane drivers, or you won't have enough energy to make quarters three and three look good.

The third quarter is where energy is the lowest. This is the quarter where "segmenting," or flat spots, is commonly seen, and where the radius is not constant. This quarter must be rounded out with a smooth, gentle push, and only ground coaching can tell you when and how much. As a starting point, put the gentle push in (smoothly) before you hit the middle of quarter three. The middle is too late.

As you finish the loop, pull just a little less  $g$  at the end of the fourth quarter than you did in the first. The aircraft is going a little slower in the fourth quarter, and most people, not just those who are new, tend to finish the loop "high." This means the exit altitude was higher than the entry altitude, which is a downgrade.

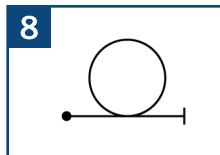
Loops are hard to do well and usually suffer under the judges' pens. I highly recommend that all Sportsman pilots get a freestyle, even if they borrow it from someone else. And the first thing I do on my freestyles is get rid of the loop! If you look in the rule book, the loop is not required on the freestyle. My airplane likes angles better. Why do the loop three times?

#### **MANEUVER NO. 9: Hammerhead**

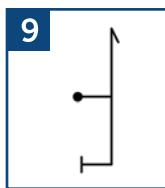
The hammerhead, also called the stall-turn, is fun to do. It is also a maneuver that can induce an inverted spin if mishandled. It is the upline and the rotation we must discuss.

The more vertical the upline, the better the rotation. What I have found is that once the vertical line has been

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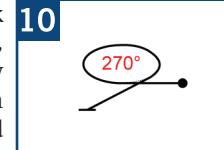


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correct. The steps in the maneuver are: 1) A coordinated roll to 60 degrees of bank or more, 2) An uncoordinated *pause*, using elevator to maintain the roll-in heading and top rudder to hold altitude, 3) A coordinated pull, with *constant* bank and ball back in the center, to the new heading, 4) An uncoordinated *pause*, again using pitch to maintain the finish heading and top rudder to hold altitude, and 5) A coordinated roll back to wings level. Altitude must be maintained throughout.



set, the stick cannot be frozen. The Decathlon, for instance, will slowly creep on its back (negative) as it goes uphill. The stick must be moved in pitch as necessary to maintain a perfect vertical until the time of the pivot, or "kick," as some call it.

The engine at full power will "torque" the aircraft as it slows. This will cause the aircraft to roll, which is a downgrade. Put in aileron as necessary to prevent any rolling on the upline. Air show and competition pilot Brett Hunter has commented that, in the Pitts Specials, if the pivot is begun before any aileron is needed, the pivot was done too early. If full aileron is needed to prevent the torque effect, the pivot was done too late!

The kick, or pivot, is really not a kick, but a rapid and smooth push of the rudder to the stop, followed a split second later by opposite aileron, followed by forward stick. These movements are not to be done simultaneously, but sequentially. The aircraft type will determine the timing. The rudder is effective immediately because it is in the prop slipstream. The aileron becomes effective only once the wingtip is moving in yaw and has some relative wind.

In this discussion we're in a left hammerhead with a clockwise-turning engine. The rudder begins the left yaw motion, which yaws the right wingtip up, giving it more relative wind. This pulls the right wingtip into a left roll. The opposite aileron input, in this case right aileron, is added to prevent this roll. Enough aileron must be added so that the aircraft yaws "in plane" with

no rolling motion present. Any roll is a downgrade.

Now here is where we enter the possible inverted spin zone. The left yaw motion causes gyroscopic forces to pitch the airplane on its back. Pushing the stick forward cancels out this pitching to keep the aircraft yawing "in plane." Preventing the inverted spin entry is about not overdoing the forward stick input.

Rich Stowell taught me a trick that helps the pilot use the correct amount of forward stick. At the end of the vertical line the pilot is usually looking at a sight gauge or some other part of the aircraft structure in relation to a spot on the left horizon. It is natural for the eye to want to follow the wingtip down as the rotation begins, but you must resist it. Instead, keep the eyes on that spot on the horizon and let the wingtip(s) drop away. Then, apply just enough forward stick to put the tip of the nose through the same spot on the horizon the wingtip or sight gauge just vacated.

When the nose reaches straight down, just neutralizing the rudder pedals will bring about a "pendulum" effect. To avoid this, put in full opposite (right) rudder when about 30-ish degrees away from straight down; then quickly go neutral. That will stop the nose quite smartly from pointing straight down. Avoid pushing negative on the downline.

#### **MANEUVER NO. 10:** **270-Degree Aerobatic Turn**

To coordinate or not to coordinate—that is the question. Actually, both are

#### **Conclusion**

Fair and flow. Those are the words I would use to characterize this sequence. It is fair to low- and high-performance airplanes. It also has a nice high energy flow to it. Sportsman should be about finesse, not horsepower.

Giles Henderson has said in the past that "...There is little we can do to affect the health of our nation's economy or the costs of fuel, hangar, insurance and maintenance, etc., all of which have and will take a significant toll on our sport. We can, however, improve our entry-level competition environment. In recent years there has not been a good home for the low-performance aircraft (API < 20). The transition from Primary to Sportsman (until 2009—GP) has a more than 200% increase in K-value. The other rungs of our competition ladder are more uniformly spaced with an average increase of about 135% in the K-values of their respective knowns."

Even with our economy and all the other outside obstacles, my hope is that there will be some bang-up competitions in 2009. I wish you all a safe year, and I wish you all 10s. 

*Gordon Penner is a NAFI Master Certificated Flight Instructor-Aerobatics and a Federal Aviation Administration Gold Seal certificated flight instructor who instructs at Stewarts Aircraft Service in Ohio. He is a past president of IAC Chapter 34, is a disciple of Rich Stowell's EMT program, and, with his better half, Lorrie Penner, is IAC 34's newsletter co-editor. He currently flies for a major airline.*

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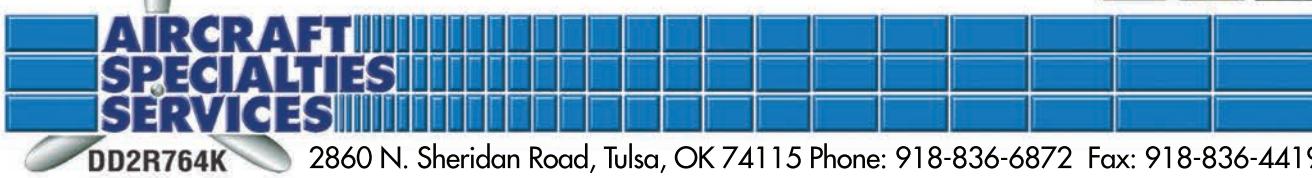
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# EMERGENCY Maneuver Training

## CP Aviation's annual EMT Scholarship

*Eamonn Powers*

**I**t doesn't say anywhere on CP Aviation's website that smiles come included with the Emergency Maneuver Training (EMT) Course, but it should! I was the lucky recipient of this year's CP Aviation EMT Scholarship offered through the IAC. I arrived on a cloudy Friday, but that didn't deter the dedicated staff from getting me excited about the course. We started each lesson of the three-module course with an extensive ground lesson about the maneuvers we were going to be performing that day. Many of the lessons can be summed up thusly, "Remember when you were first learning to fly and your flight instructor said don't ever do this? Well let's go and do it!" In a calm, relaxed environment that permeated throughout the airport, each lesson would delve into some

of the most typical and oftentimes deadly mistakes pilots make and how to get out of those problems quickly and safely.

The first module consists of a reintroduction to the opposite side of the power curve. Coming from a jet, I had to be persuaded by my instructor to fly at 50 knots in the Citabria, but the first lesson reacquainted me with slow flight, stalls, and Dutch rolls. After these preliminary maneuvers it was time for some falling leaf stalls while trying to keep the aircraft straight with my hands off the yoke and my feet just dancing on the rudder pedals. That was easily the most fun I had had in an aircraft in months if not years, and to think this was only day one. We returned to the airport for a couple landings and to practice power-off

approaches. Each and every segment of the training is practice for real life, so I was told every landing I would be making would be with no power. No pressure or anything. The remainder of the module focused heavily on spins, spins, spins, and one more thing, spins. I am fairly sure 99 percent of pilots that take this course will spin more in the first day than they would have in their entire flying career. I was so well-versed in spin entry and recovery that I dreamt of spins that first night and accidentally kicked my wife in the leg recovering from one. I finished module one confident and happy knowing there's nothing that a functional aircraft can do that I wouldn't be prepared for; the non-functional aircraft, well, that's what module two was all about.

Module two delved into all the nooks and crannies of in-flight emergencies. Maneuvers included inverted flight, graveyard spirals, rolls, failures, the most *unusual* attitudes, an intense review of slips, and—obviously—power-off 180s. When we prepped for a flight including slips, I thought, “Slips? No problem. I have slipped with the best of ‘em.” I thought wrong. At the time of my training I had 1,100 hours total time, and truthfully not until that day did I get a true appreciation to what a slip was and what it truly is capable of. We did turning slips and side-slips so intense that I now have a new appreciation for what an aircraft can really do. The next lesson took that new appreciation and turned it into admiration. The control surface failure lesson was one I definitely came back from sweating. Aileron jams, rudder jams, elevator jams, and recovering from stalls and spins with a myriad of problems. I was so busy the time just flew and it was time to return to the airport, but on this lesson the instructor

## The flying from the first day was ultra positive...

switched up the routine and instead of power-off landings, I was told I was going to land the aircraft without my hands ever touching the stick. Trim, rudder, power, and a gusty wind make for a very interesting approach to landing. Throw in not getting the controls back on a go-around and I got a real appreciation for that elevator sitting behind me.

With two modules done, I was thinking there was no way to really improve upon the experience, but module three flipped me upside down and rolled me right-side-up into the best time I could ever have in an airplane. The final module was basic aerobatics: Cuban-eights, hammerheads, loops...the whole nine yards. I was briefed not only on how each maneuver should be executed, but also on how to use the techniques I had learned in module one and two to recover from a botched maneuver. Being an aerobatic enthusiast and a pilot, I thought this entire module was perfect. I could not have asked for anything better, but then wait...it got better! The first lesson introduced me

to most of the maneuvers; the second lesson was the rest of the maneuvers and putting them together into a small sequence. The next day was a review and then performing an aerobatic routine. This is where things got unbelievable for me. Judy Phelps was nice enough to suggest doing the last lesson of the third module in her Pitts S-2B. The Pitts, for anyone who has not flown in one, is unbelievable. So there I was at the end of my course in the Pitts tearing up the sky performing my own aerobatic sequence. It was tough not to get too carried away, but Judy's reassuring words and instruction made it the greatest ending to the most fun I'd ever had in an airplane.

The flying from the first day was ultra positive and really a true joy. So much of a joy that I was doing two a day and found some time to add extra flights to grab my tailwheel endorsement. Being a certificated flight instructor, I thought how the things I had learned will be brought into my students' training. I would suggest to any pilot that has the opportunity to get to Santa Paula to *do this training*. It is the most fun, educational, helpful tool for a pilot I can imagine. And for anyone who is in the mood to fall back in love with aviation, go to CP Aviation. I was coming from the northeast corridor flying a regional jet and a month away from a furlough, and then there I was at an airport with no tower, no clearance, no ATIS, no glass, set the altimeter with the field elevation. It was okay to go flying as soon as the fog burned off high enough to see a mountain peak that is south of the runway. It was an amazing experience to go from waiting for a 747 to land to holding short for an RV and a Stearman. The people at CP are down to earth, happy, and always willing to help. I would like to personally thank Jeremy, Darin, and Judy and all of CP Aviation in Santa Paula, California for their help and generosity. They have inspired me and without a doubt made me a better, more prepared aviator who has even more fun now than ever!



For more information on aerobatic training scholarships, please visit [www.iac.org/programs/scholarships/](http://www.iac.org/programs/scholarships/)

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Allen Silver

## Ask Allen

A master rigger answers your questions about parachutes.

By Allen Silver, IAC 431160

**Q:** Do I have to be more careful with my chute now that we've gone to 180-day repacks?

**A:** Once a freshly packed parachute is picked up from your favorite rigger, the responsibility to maintain it in an airworthy condition until the next repack has always been the responsibility of the owner. Nothing has changed except you are now responsible for the care and feeding of your parachute for an additional 60 days. Hopefully, you've always been careful with your expensive cushion. Maybe now is the time to purchase a carry bag for those everyday trips to and from the airport, or a plastic bin with a snap-on lid to store it. How about both? You can't pamper your parachute too much.

**Q:** I use a static line to assist in my chute's deployment. How do I properly hook it up?

**A:** Static lines are not in common use in the United States, but I recently had a parachute come to me for routine servicing, and the static line was hooked up incorrectly. The static line was attached in a manner that would have prevented the rip cord from being pulled. If this individual had to use the parachute, it may have left him or her dangling alongside the airplane.

Static lines are very popular in Europe and some other countries, and they have their place. Personally, I do not care for them, but they're out there and must be properly

attached. Follow the manufacturer's instructions explicitly. If you come up with your own ideas about how it should be attached, please call the manufacturer or your rigger for advice. There are two attach points for the static line. One goes to an attach point in the aircraft, and the other end is attached to the rip cord. It is very important that both lanyards are attached in a manner that allows a straight and unimpeded pull (see photo 1). Photo 1 only shows the end attached to the rip cord. In this instance that's where the problem occurred. The lanyards should **never** be routed through or around anything that could prevent a smooth deployment (see photo 2). The red pocket holding the excess static line is, in this case, attached properly over the rip cord pocket. But the pilot took some of the excess lanyard and routed it under the straps holding the static line pocket in place, not realizing it would probably hang up if he had to use his parachute (see photo 3). His idea was to stow some of the excess lanyard out of the way. The excess lanyard should have gone directly to the rip cord. Before doing any home rigging, no matter how simple it may seem, please call your rigger for advice before changing anything.

If you're attending Sun n' Fun in April, I invite you to attend my **Emergency Bailout Seminar for Pilots** on Friday, April 24, at 11:00 a.m. in Forum Tent 4. I'll also be available at the Para-Phernalia booth in Building B on Friday and Saturday, if you have any questions.

Otherwise I'll see you in *Sport Aerobatics* in June.

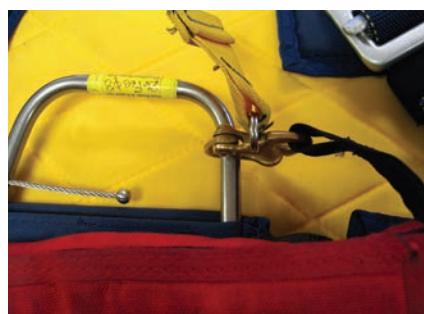


Photo 1



Photo 2



Photo 3

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# Calendar of Events

For complete and up-to-date information, visit [www.IAC.org](http://www.IAC.org). If hosting a contest, let the world know by posting it there.

## Carolina Boogie (Northeast)

**Friday, April 24 - Sunday, April 26, 2009**

Practice/Registration: Thurs., April 23 - Fri., April 24  
Rain/Weather: Friday, April 24  
Power: Primary through Unlimited  
Site: Lumberton (KLBT): Lumberton, NC  
Contest Director: Michael Davis  
**Phone:** 434-251-9467 • **Website:** <http://iac19.org/>  
**E-Mail:** [Michael.Davis@areva.com](mailto:Michael.Davis@areva.com)

## LA Gold Cup (Southwest)

**Friday, May 1 - Saturday, May 2, 2009**

Practice/Registration: Thursday, April 30  
Rain/Weather: Sunday, May 3  
Power: Primary through Unlimited  
Site: Apple Valley (KAPV): Apple Valley, CA  
Contest Director: Patrick Dugan  
**Phone:** 805-612-0976 • **Website:** [LAGoldCup.info](http://LAGoldCup.info)  
**E-Mail:** [patrick.dugan@yahoo.com](mailto:patrick.dugan@yahoo.com)

## Sebring Aerobic Contest (Southeast)

**Thursday, May 7 - Saturday, May 9, 2009**

Practice/Registration: Tues., May 5 - Wed., May 6  
Power: Primary through Unlimited  
Location: Sebring (SEF): Sebring, FL  
Contest Director: Hubie Tolson  
**Phone:** 252-670-9370  
**Website:** [www.iac23.com/](http://www.iac23.com)  
**E-Mail:** [hubie@uhfdevelopmentgroup.com](mailto:hubie@uhfdevelopmentgroup.com)

## Robert L. Heuer Classic (Mid-America)

**Saturday, June 6 - Sunday, June 7, 2009**

Practice/Registration: Friday, June 5  
Power: Primary through Unlimited  
Site: Greater Kankakee Airport (KIKK):  
Kankakee, IL  
Contest Director: Jim Klick  
**Phone:** 815-609-7165 • **Website:** [iacchapter1.com](http://iacchapter1.com)  
**E-Mail:** [jimklick@sbcglobal.net](mailto:jimklick@sbcglobal.net)

## Southeast Aerobic Open (Southeast)

**Friday, June 12 - Saturday, June 13, 2009**

Practice/Registration: Thursday, June 11  
Rain/Weather: Sunday, June 14  
Power: Primary through Unlimited  
Site: Treea Field (4A7): Atlanta (Hampton), GA  
Contest Director: Marty Flournoy  
**Phone:** 706-326-4877 • **Website:** [iac3.org](http://iac3.org)  
**E-Mail:** [marty.flournoy@fcrealtors.com](mailto:marty.flournoy@fcrealtors.com)

## Lone Star Contest (South Central)

**Friday, June 12 - Saturday, June 13, 2009**

Practice/Registration: Thursday, June 11  
Rain/Weather: Sunday, June 14  
Power: Primary through Unlimited  
Site: North Texas Regional Airport (GYI): Denison, TX  
Contest Director: Jeremy Humphreys  
**Phone:** 940-564-6673 • **Website:** [www.iac24.org](http://www.iac24.org)  
**E-Mail:** [jjhumphreys@airtractor.com](mailto:jjhumphreys@airtractor.com)

## Ohio Aerobic Open (Mid-America)

**Saturday, June 20 - Sunday, June 21, 2009**

Practice/Registration: Fri., June 19 - Sat., June 20  
Power: Primary through Unlimited  
Site: Union County (MRT): Marysville, OH  
Contest Director: Chris Keegan/Jeff Granger  
**Phone:** 513-265-5640 • **Website:** [www.iac34.com](http://www.iac34.com)  
**E-Mail:** [cke8009542@aol.com](mailto:cke8009542@aol.com)  
or [jgranger@columbus.rr.com](mailto:jgranger@columbus.rr.com)

## Wildwood AcroBlast (Northeast)

**Friday, June 26 - Sunday, June 28, 2009**

Practice/Registration: Thurs., June 25 - Fri., June 26  
Power: Primary through Unlimited  
Site: Cape May County Airport (KWWD):  
Lower Township, NJ  
Contest Director: Craig Wisman  
**Phone:** 717-877-8933 • **Website:** [www.iac52.org](http://www.iac52.org)  
**E-Mail:** [cwisman@aol.com](mailto:cwisman@aol.com)



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Ryan Birr, President, Northwest Insurance Group

I don't know why insurance is such a nasty word. Insurance brokers have certainly been compared with some of the more, let's say, less ethical salespeople in retail sales, but I believe this is a poor assumption. A good insurance broker is on par with your attorney and accountant, and together they can help you build a risk management program that helps you protect your assets as well as be socially responsible with regard to your liability to other people.

Sometimes, it is unclear whether or not the insurance person or organization you are working with is an "agent" or a "broker," but this is an important distinction for you when buying insurance. Agents are representatives of the insurance companies, and brokers are *your* representatives for insurance buying. Brokers are empowered by you to "shop" for your insurance, but they have no binding authority with insurance companies because they aren't representatives of the companies. You hire them to find the best insurance products to meet your needs, and hopefully to do so at competitive prices. Brokers ordinarily work on a commission basis, which is set by the insurance company through a written agreement between the brokers and the company at the time they place the order for your insurance coverage. But they may occasionally work on a fee-only basis if the account is large enough to warrant it.

Throughout the years, I have heard opinions from aircraft owners about the insurance "racket," and how there seems to be a monopoly and/or collusion between insurance companies because multiple brokers can't access the market at the same time. But the process is a bit more complicated than that. When a broker asks for quotes from various insurance companies on your behalf, she receives the quote by the underwriters to give to you. At the same time, she is also given the ability to *bind* the insurance with her on your behalf; this means the broker can put your coverage in force, and the insurance company has now accepted that it will pay your hull loss and, in the case of liability, defend you and pay your liability losses up to the policy liability limits that you have purchased (subject to policy terms and conditions).

Once this authority to bind is extended to your broker, it is not extended to any other broker (hence the "lock-out" of quotes to other brokers), which has the appearance that something "funny" is going on. However, there is safety in this process for you; you do not want multiple brokers having access to your information as well as having the ability to bind your insurance.

Your broker is responsible for acquiring the quotes and finding the most competitive prices and coverage for you. It does not matter how many brokers you eventually call for quotes because the availability of aviation insurance products is limited to the number of insurance companies selling aviation insurance policies. Brokers don't set the price of your insurance package, the insurance companies do.

Insurance is the transfer of risk of loss from you to an insurance company. Insurance companies assume this risk of your potential losses for a fixed premium. They accumulate all the premiums from all insureds and plan that losses don't exceed the premiums they have collected. Unfortunately, aviation losses are normally very large and there is a relatively small pool of policyholders to collect premiums from; aviation is a small market. Insurance premiums are a function of the group's loss experience along with, but not necessarily of, your individual loss experience. The new IAC Aircraft Insurance Program is no different. IAC hired us in 2008 to provide insurance marketing services for its members. Because of the homework that IAC did early on, most of the "shopping" was already accomplished and you only need to call us for those terms that we negotiated in advance for you.

The moral to the story? Finding a broker that is likable and skilled enough to find good insurance for you isn't necessarily an easy or pleasant process. Fortunately for you, Vicki Cruse and the rest of the gang at IAC headquarters spent more than a year identifying what you wanted in an insurance package and researching alternatives regarding brokers... welcome to the new IAC Aircraft Insurance Program and Northwest Insurance Group Inc. ☺



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