

FEBRUARY 2007

SPORT Aerobatics

OFFICIAL MAGAZINE OF THE INTERNATIONAL AEROBATIC CLUB

SIU Aerobatics: Total Aviators

- The Mason Dixon Clash
- Noise and Aerobatics
- The Primary Sequence

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SIU Aerobatic Team members pilot their Super Decathlon over Oshkosh, Wisconsin.
– Photo by Mike Steineke



Judson Bartlett

LETTER from the EDITOR by Scott Westover

2007 IAC board nominations are here

You will meet some new people in this issue of *Sport Aerobatics*. We are continuing the effort to include more material written by our members. People like Mark Mattioli, an IAC member who happens to be a lawyer. We appreciate his willingness to share his perspective on legal issues that impact our sport.

Contributing to *Sport Aerobatics* or sharing an idea for an article is one way to make sure the International Aerobatic Club represents your interests. There are other things you can do as well, including participating in the nomination and election of the IAC board of directors. Please take a moment to read the following letter from Ann Salcedo, the IAC Nominations Chair.

"It is time for re-election of officers and directors to the IAC board for 2007. Up for re-election this year are two officers, including the president and vice president, and three director positions representing the Southeast, Northeast, and Southwest regions. In order to run for a position on the IAC board of directors, candidates must be a member of EAA and IAC in good standing. To run for IAC president, in addition to being a current member, the candidate must have been an active member for the past three years and have served a minimum of a one-year term on the IAC board of directors within the three years prior to nomination. All candidates must submit the following items prior to the March 14, 2007, deadline:

1. Ten current IAC member signatures
2. A résumé
3. A recent photo

"Candidate résumés should be one paragraph in length and focus on personal background information and qualifications for office. Candidates may want to share their motivation, involvement, and vision for the future of IAC."

"A nominating petition form is available online in the Members Only section of the IAC website at www.IAC.org. Forms should be sent to IAC Nominations Chair Ann Salcedo by March 14, 2007, by e-mail to AnnSalcedoRN@aol.com, by fax to 954-434-7498, or via mail to 20117 SW 54th Place, Ft. Lauderdale, FL 33332. Election results will be announced at the IAC Annual Meeting to be held at the EAA AirVenture Oshkosh Fly-In July 23-29 in Oshkosh, Wisconsin."

If you have an opinion about the future of IAC and our sport, now is the time to get involved. Contact Ann with your nomination or questions, and when your ballot arrives, be sure your voice is heard. In the meantime, if you have an idea for *Sport Aerobatics*, my mind and door (actually, e-mail works best) are open. Drop me a line and we'll discuss your idea. I hope you enjoy this month's issue of *your* magazine. Please keep your comments and suggestions coming.

Contact Scott Westover with your articles, comments, and suggestions at Tookyflyer@tds.net.

***Sport Aerobatics* is your magazine. To submit news, comments, articles, or article ideas, please send them to: IAC, P.O. Box 3086, Oshkosh, WI 54903-3086; or email them to tookyflyer@tds.net.**

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PRESIDENT'S PAGE

by Vicki Cruse • IAC 22968
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Perception Isn't Always Reality

One member's frustration with competition

In the January issue of *Sport Aerobatics*, Budd Davisson wrote a piece that I think was inspired by an e-mail he received from "Fred." It was a strong letter that culminated in the cancellation of both an EAA and IAC membership. Let's reflect a little on Fred's experience and what can be learned from it.

Fred's introduction to IAC was back in the 1970s, where he met local aerobatic heroes we've all heard of: Bob Herendeen, Charlie Hillard, and Gene Soucy. He also was building an airplane and was heavily involved with the local EAA chapter. The draft came along and then a return to college, followed by many years in the workplace. In early 2000, he quit the hectic lifestyle to build an aerobatic airplane. He went to Oshkosh in 2001 to get answers to technical questions concerning his airplane and was disappointed when he found none. Life continued, and he decided to get back into aerobatics, so he attended a local contest two years ago, his first since 1972.

He headed off for the local contest and found that no one would talk to him. He volunteered to work the contest and was placed on a boundary with a radio that didn't work consistently and no instruction. When the category was over, he was made to feel like everything that went wrong was his fault. He packed his bags and left. Upon reflection, Fred wrote, "There just doesn't seem to be that atmosphere of sharing and learning that was there before. It's a real disappointment after all these years."

We've heard time and time again about people who have bad contest

experiences like this one, yet there are others that have a positive experience, such as Robyn Lawhon in the December issue. As Fred alludes to in his e-mail, perhaps it is the competition environment.

I'll be the first to admit that if I am getting ready for a flight and someone comes up to me wanting to discuss noise issues in the local practice box, I may come off a little disinterested. I ask the person to allow me to finish my flight and

spent, who doesn't want to do his or her best?

If you really want to talk aerobatics in a stress-free environment, come to the banquet and you can talk all the aerobatics you want. Here the competition stress is gone; it's all about the people. Add a few drinks to this, and it can go on for hours. Or go to an aerobatic flight school (yes, they are getting few and far between) where you can still talk aerobatics for free. The IAC has a wealth of knowledgeable members, and most are more than willing to share everything they know – usually outside the stress of competition.

Lastly, Fred suggested a noncompetitive environment for people to enjoy aerobatics. He is absolutely right. There are several chapters that hold Achievement Award Days, where pilots fly for a pin (formerly patches). They fly to a standard and not against anyone but themselves. This program and the Mastery of Flight program have the potential to bring the "Fred's" of the world into the aerobatic community. And once you get into this "world," you soon realize competition is just a side note to the friendships you make while you participate in something that challenges you every time you do it.

One last note to future contest directors: never, ever put a newbie on the boundary. Leave this job to a competitor, or at the very least put an experienced person on the corner with the newbie. This is a great way to turn people off to the sport, even though this can be one of the best seats in the house. ☺

"When the category was over, he was made to feel like everything that went wrong was his fault."

to continue the discussion later. It's tough to balance; after all, I am at a competition and I want to go home knowing I did the best I could. Most people are very understanding.

This focus, and perceived elitism, is part of the issue Fred is talking about. When pilots are focused on competition, they may seem standoffish, and those who aren't competing will probably be busy volunteering and also appear disinterested, but not always. To assign this attitude to everyone at every contest would be a huge disservice. To the person on the outside, competitors probably do seem to take it too seriously...but considering the money and time



NEWSBRIEFS

Photo courtesy of Don Guttridge



Experts such as Wayne Handley will be on hand at Yuba County Airport in March.

16th Annual Aerobatic Safety Seminar Coming to Yuba County Airport

The 16th annual seminar, "Be Spin Safe, Learn From The Best To Be The Best," will be held at the Yuba County Airport, Marysville, California, on March 18. The Aerobatic Safety Seminar was the creation of Vern Dallman. After Dallman died, his wife, Ruth, allowed the event to continue at the ranch for another two years. Today, the Southwest Airshow Networking (SWAN) puts on the life-saving event.

"We continue to uphold Vern's high standards for bringing in speakers who are the cream of the crop in the air show industry," said Jacquie Warda, SWAN chairman. Speakers make a brief presentation in the morning and perform aerobatic demonstrations in the afternoon, including a spin demonstration. "We go from the cockpit to the ground in covering all the important issues related to safety and aerobatics," said Warda.

Imagine listening to Wayne Handley share his wisdom on how to use his famous "if" strategy to be 100 percent ready for virtually any unex-

pected event and then watching air show Edge 540 pilot Jon Nash deliver his teeth-chattering message about why his "pre-decision strategy is the difference between living and dying in an emergency situation in the airplane."

The SWAN air show conference starts on Friday, March 16, with the 4th Annual Snowbird Invitational Golf Tournament, followed by the Southwest Airshow Networking Conference on Saturday. The Aerobatic Safety Seminar follows on Sunday. For more information, e-mail Jacquie Warda at skyydnz@yahoo.com or visit www.SwanSafety.com.

2007 Contest Knowns Available for Download

The power and glider Known sequences for the 2007 contest season are now available for download on the IAC Members Only website at <http://Members.IAC.org>. When logging on, remember to have your EAA member number handy.

Stowell's New Book Now Available

Master Instructor Rich Stowell, FAA 2006 National Flight Instructor of the Year, has released a new book entitled *The Light Airplane Pilot's Guide to STALL/SPIN AWARENESS*. The book draws on 100 years of stall/spin research as well as Stowell's two decades and nearly 30,000 spins of teaching experience.

According to air show pilot and spin training advocate Patty Wagstaff, "We've been losing pilots needlessly to the stall/spin for far too long. It's time we did something about it!" To that end, the 520-page book exposes 12 common stall/spin myths. Stowell then devotes four chapters to a historical look at the stall/spin; three more chapters make sense of accident statistics; four chapters explore the spin environment from airplane design and human factors standpoints; eight chapters form the basis for a comprehensive ground school in stall/spin awareness; and the final four chapters tackle the spin training debate. Appendixes offer a compilation of spin recovery information for more than 100 single- and twin-engine airplanes, as well as an in-depth analysis of the Piper Tomahawk's controversial stall/spin behavior.

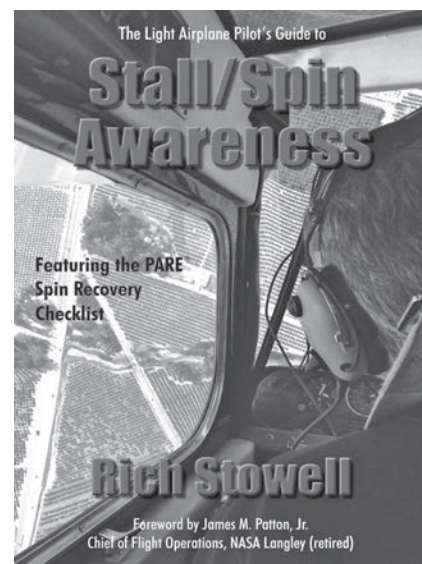


Photo courtesy of Rich Stowell

Rich Stowell packs 30,000 spins of experience into his new book.

Jim Patton, retired chief of flight operations at NASA Langley, guest-authors an interesting chapter about his extraordinary career as a spin test pilot. List price for the book is \$34.95. For details, visit www.RichStowell.com or call 805-525-2037.

NAFI Presents Award

The National Association of Flight Instructors (NAFI) is pleased to announce its first-ever Centenary Permanent Membership Award to John Miller of Poughkeepsie, New York. John, who has flown everything from Jennys to jets, celebrated his 101st birthday on December 15, 2006. A Centenary Permanent Membership Award will be given to every current NAFI member attaining the age of 100.

Miller flew his first solo in 1923 and is perhaps best known to EAA members as a pilot of the Pitcairn Autogiro. John began instructing flight students in a World War I JN-4.

In 1939 he began a long and fruitful career with Eastern Air Lines as the pilot of a Kellett wingless autogiro, an aircraft he test-flew during development. John flew 10 flights a day to and from the roof of the post office building in downtown Philadelphia in connection with an experimental air-mail contract. His career progressed to flying DC-8 jets, and he retired from Eastern in 1963. John still participates actively in the Bonanza community and flies his own Beechcraft.

Embry-Riddle Devastated by Tornado

While most IAC and EAA members were celebrating the Christmas holiday, the staff at Embry-Riddle Aeronautical University in Daytona Beach, Florida, was dealing with the aftermath of a tornado that ripped through the campus that day. More than 50 ERAU aircraft were destroyed or damaged by the tornado, while nine campus build-

ings were also hit. The damage caused university officials to delay the start of classes for one week following the holiday recess.

EAA immediately offered assistance to Embry-Riddle in the aftermath of the storm, and the university has asked EAA for possible assistance from its members. The university is now looking to leaseback, or rent by the flight hour, several late-model Cessna 172s (180-hp G1000 or conventional-equipped aircraft) to replace those lost in the tornado. The leases or hourly rentals are expected to last up to four months. The aircraft will be maintained to Embry-Riddle exacting maintenance standards and returned to the owner/operator with either a fresh 100-hour or annual inspection.

To learn how you can assist, contact Frank Ayers, chairman of the Flight Department, at ayersf@erau.edu or Jack Haun, director of Maintenance, at haunj@erau.edu.

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Courtesy Kent Misegades

By Kent Misegades

Our 2006 IAC Chapter 19 aerobatic contest put a cap on the 2006 aerobatic competition season for most of us in the Northeast region by hosting the Mason Dixon Clash in Farmville, Virginia. Weather on Thursday was great, and our competitors made this their day for arrival and practice as Friday was forecast to be overcast and raining. Thursday night we gathered at the local Mexican restaurant for good food, good company, and exaggerations of our extraordinary flying abilities. Friday was a washout as, true to forecast, rain moved in. The forecast called for the clouds and rain to leave the area by noon on Saturday with high winds to follow, so we pushed our pilot briefing out to 10:00. Saturday morning we sent up a "dove," Dave Underwood and Cynthia Lyons in their Extra 200, to determine the actual winds aloft. The report came back, "Good to go." However, it would not take long for that report to change.

We positioned our judges and boundary judges and blasted off with Andrew Godbold as our first Primary contestant in Rob Bond's Pitts S-2B with Rob along as the safety pilot. It quickly became apparent that the winds aloft had increased to the point that staying in the box was almost impossible. As Rob and Andrew came in for their

landing, Rob reported that conditions on landing were marginal. Ron Stevens, our safety director, quickly convened our safety committee, and the decision was made to bring the contest to a halt almost before it began. Where did all of that wind come from?

Saturday afternoon was spent in a variety of activities. Some went furniture shopping, others to the billiards hall, a few to the movies, and some to their rooms. All reconvened back at Charlie's Restaurant for our banquet on Saturday night. As usual, Charlie's did a great job, and all seemed to enjoy our time together, even though there were no awards to present.

Courtesy Kent Misegades



Contest Director Jim Walker (left) congratulates Luke Lee of Jonesborough, Tennessee, for winning the Primary category in his Pitts S-2C. This was Luke's first competition.

Sunday was forecast to be clear skies with continued windy conditions, so we set our pilot's briefing for 6:30 a.m. in hopes of getting at least one sequence in for everyone before the winds increased. This strategy worked. While the crosswind in the box was strong, the wind on landing was reasonably good for everyone's first flight. So off we went with Primary, Sportsman, Intermediate, and Unlimited. With one flight "in the bag" we had a contest, but most everyone was eager to fly again.

As we prepared for the second flight, the winds once again began to quickly increase. The strong winds and gusty conditions across the runway were again ruled as unsafe for aerobatic competition, so we called it a contest.

This year our contest was truly a multi-chapter event. Jim Walker did a great job organizing the contest as contest director, Charlie Harrison once again performed the duties of chief judge, Priss Bashore and Debby Wisman served as our registrar and scorekeeper, and Mark Cassada prepared the registrar's information prior to the contest. Michael Davis made major contributions by providing the aerobatic box marker material complete with landscaping timbers to hold them in place during the gale force winds, plus he and his niece, Amanda, provided invaluable

assistance in putting out the chairs, tables, and boundary markers and in providing transportation to get folks in place in a timely manner. Pat Hayes provided support in a variety of functions. I performed our starter duties. Ron Stevens was our safety director, and several of us performed the additional duties of volunteer coordinator, runner, UNICOM monitor, etc.

Tom Hanks, our past chapter president, gets the award for the farthest distance traveled to attend the contest, as he came in from California to provide judging assistance. Our overworked judges—Rob Bond, Tom Hanks, Charlie Harrison, Cynthia Lyons, Dennis Thompson, David Underwood, and Jim Wells—did a great job and never complained about their time on the line. Thanks to everyone for volunteering wherever needed and for having such a great attitude during our weather difficulties.

Jim Stasny, a longtime friend of IAC Chapter 19, flew his Pitts S-1

from Florida and brought along Chris Rudd, flying his new Pitts S-1. This was the first contest exposure for Chris. Rob Bond also brought Andrew Godbold for his introduction to aerobatic contest flying. I feel sure that both Chris and Andrew will be back to compete in future contests, thanks to the efforts of Jim and Rob. Keep 'em coming!

Thanks also go to Kim and Tommy Grimes, the FBO managers for Farmville, and their staff. As usual, they did an excellent job of supporting us, opening the restaurant for meals and making hangar space available for all of our toys. And I can't forget to offer an adrenaline pumping thank-you to Dennis Thompson for demonstrating the capabilities of his Edge 540 during a 4-Minute Free flight!

We all wish that the weather would have been better, but we did have a successful contest and all was conducted safely, which is of utmost importance. We hope to see you at our next contest! ☺

≈2006≈ MASON DIXON CLASH CONTEST RESULTS:

PRIMARY

Luke Lee
Andrew Godbold

SPORTSMAN

Craig Wisman
Wes Jones
David Brandon
Ronald Stevens
Pat Hayes
Jim Stasny

INTERMEDIATE

Larry Bashore
Larry Macon
David Underwood
Cynthia Lyons
Jim Wells

UNLIMITED

Rob Bond
Dennis Thompson

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LETTERS to the EDITOR



Soucy Brings Back Fond Memories

The article on Gene Soucy in the December 2006 issue of *Sport Aerobatics* brings back fond childhood memories. As a 15-year-old lineboy at the famed Kentucky Flying Service at Bowman Field, Louisville, Kentucky, my many duties included sweeping the massive WWII-era hangar, a job that could take two to three hours. This hangar contained an eclectic collection of aircraft, everything from corporate aircraft, T-6s and Stearmans, a dozen or so Cessnas being serviced, and an occasional helicopter or two. My favorite airplane, however, was a cherry red Pitts with the name Paul Soucy on the side, Gene's father. When I learned that Gene was an

accomplished aerobatic pilot and only a few years older than me, it opened my eyes to the possibility that a mere mortal might someday join the ranks of my heroes in the sky. I have enjoyed reading of Gene's success and fame over the years with a certain amount of pride; after all, having a clean hangar floor underneath his plane must have helped him in some minor fashion.

Unbeknownst to me, another lineboy at KFS in 1973 was Mark Ash, a fellow member of EAA Chapter 1114

in Apex, North Carolina. Mark and I discovered that we had crossed paths three decades ago only after both of us met at an EAA meeting a few years ago. Obviously, Mark too was inspired, as he has flown aerobatics for years in Pitts, Stearmans, Christen Eagles, and now his bright yellow RV-8. My own aerobatic experience is modest, but through the association with IAC 19 members this is rapidly changing. Gene probably never noticed his clean hangar floor, but I am proud to have known his plane and be influenced by his genius in the air. I wish him many years of continued success.

Kent Misegades
IAC 19, EAA 1114

Congratulations All Around

Please allow me to compliment you on the December 2006 issue of *Sport Aerobatics*. For personal reasons, I found it included several items that particularly pleased me.

The first was the long overdue and tremendously deserved article on Gene Soucy. His honor of being inducted in the Hall of Fame was absolutely marvelous. I have followed his career for many, many years, including his Red Devils and Eagle days, and he is indeed the "best of the best" in my book...I wish he had been so honored years ago. I have always had the utmost respect for all of his many contributions



to aviation. In fact, all three of the original Red Devils were my very special favorites in those days, so please do convey to him my warmest wishes and congratulations.

Secondly, I was delightfully pleased with the Debby Rihn-Harvey win as the overall U.S. National Champion. Her determination and dedication

are excellent traits, and I offer her my sincere congratulations for her aerobatic expertise and a job well done.

Additionally, I would like to compliment Robyn Lawhon for her article on turning upside down in an airplane, not throwing up, and exclaiming her life would never be the same. Robyn, you are absolutely correct. Once that aerobatic bug bites you, your life is never, ever the same again...it's a hundred times better.

Also, my warm wishes go to Mike Heuer on his election to the FAI Executive Board. Well done!

Betty Skelton Erde



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marks a key difference
between flying a sequence
and flying loose figures.”*

5 ●

180

FLYing the PRImary sequence

By Rob Holland

While every aerobatic pilot is eager to jump in the cockpit and grab the stick, it's important to remember that the first step in flying the Primary sequence is done on the ground and in your own head. Mentally preparing to fly any sequence is very important, and I guarantee that preparation will make the difference between flying a well thought out and presented sequence and just flying maneuvers one after the other. What you are really doing on the ground is creating a plan. Remember that your plan has to be flexible because things can't always work the way we planned them on the ground when we are actually in the sky.

When you plan to fly the entire sequence, there are things to consider. Will the wind be a factor? Where does each figure go in the box? What about altitude? What do I do if I need to take a break? There is a lot to think about, so before we fly through the Primary sequence, I'd like to share a two-step "mental checklist."

1. What Is the Environment?

What is the wind condition? Will I need to manage a crosswind or a headwind? Understanding the wind will determine where in the box you are going to start the sequence. For example, if there is a crosswind blowing from the front of the box to the back of the box, it makes sense to start the sequence up front. This is especially true in the Primary because there are no cross-box maneuvers until the end of the sequence. When you get to the cross-box maneuver, the 180-degree turn, which way are you going to turn? If the wind is blowing you to the back of the box, then it makes sense to turn into the wind and correct for the wind. It is better to have the wind working for you instead of against you, and the best time to determine how to make that happen is on the ground.

Wind plays a large role in determining how you're going to fly each individual figure. For example, you may need more or less float on top of the loop depending on how much headwind you have.



The sequence card places the figures in the correct part of the box.



Kate DeBaun

Walking through the sequence – literally – helps you prepare for the flight.

In competition, the wind will determine if you are going to fly the “B” form or the “C” form. In other words, are you going to fly from the judges’ left to right or from their right to left? Also, wind may force you to spend a bit more or less time between the figures to properly place them in the box.

2. Placement: Location, Location, Location.

When flying a sequence, whether in competition or for practice, you

don’t want to take off and just fly a bunch of figures. You want to “present” the figures. In competition, presentation to the judges is part of your score. Take a good look at your sequence card. The card is a two-dimensional representation of the aerobatic box. Figures on the left side of the card should be located in the left side of the box, figures in the middle of the card should be located in the middle, and so on.

You want to visualize where you’re going to place each individual fig-

ure. For example, if you come out of the spin and you’re in the middle of the box, there is no need to rush into the half-Cuban that follows it. The half-Cuban is supposed to be in the right side of the box (assuming we are flying the “B” form). So, drive the plane straight and level for a second or two until you’re in the location of the box where you want to present the figure and *then* perform the half-Cuban. This is managing the box and marks a key difference between flying a sequence and flying loose figures.

You can plan this out ahead of time by thinking about the box and where you are going to put the figures. “Walking” the box helps as well, and you have probably seen competitors and air show pilots doing this very thing. If you have been at EAA AirVenture Oshkosh and watched the performers walking with their arms acting like ailerons, then you have seen this technique in action. It works so well that formation teams like the Red Baron Pizza Squadron use the technique as a team to practice their flights.

Here’s how it works. Find a nice piece of tarmac or hangar floor and draw out a box. Then walk through the box, always being aware of where the judges are, and place the figures where you want them. When I am preparing to fly in competition, I find a quiet place where I can have a view of the box as the judges see it. I then imagine watching myself flying the plane in the box...seeing where the figures should be...imagining how the wind is going to affect the figures. Getting the judges’ point of view will help in your planning and preparation of where you are going to present each figure. Looking at the box in the sky, imagine the Aresti figures on your sequence card being transposed onto the piece of sky you are looking at.

Before we fly the sequence in the airplane, let’s fly it in our mind. Here are some things to consider.

The first figure is a 45-degree upline with a cap-off to level. This sounds like a simple figure, and it is, but there are some critical things we still need to start strong. Where are you going to start the figure? Assuming we are flying the “B” form, the sequence card tells us this

first figure is on the left side, so we should start on the left just as you enter the box.

What is your airspeed at the start? More importantly, at that starting airspeed, how much altitude are you going to gain? If your gain in altitude is 500 feet and knowing that the next figure is a spin, the Primary pilot should start at about 3,000 feet AGL to be positioned at 3,500 feet (the top of the box) for the one-turn spin.

You'll want to be very slow and at the top of the box for the spin. Ideally, you should be able to just pull the power off and be at the airspeed required to drop off into the spin. You don't want to cap off the first figure with so much speed that you drift across the box trying to slow down for the spin. If you look at the sequence card again, we see the spin is right in the middle of the card and therefore should be placed right in the middle of the box, right in front of the judges.

I personally would plan on making the spin a right rudder spin (on aircraft where the prop spins to clockwise as seen from the cockpit. If you're flying a Russian mount where it spins the other way, spin left instead). We want to come out of the competition spin on a vertical downline. The gyroscopic forces of the prop, even an idling prop, will help the recovery of the spin be nose-low so we won't have to push the nose down as far to establish the vertical downline. We'll need to know our altitude loss and target airspeed to be ready for the next maneuver.

The next figure is the half-Cuban-eight. In lower powered airplanes, you will want to come out of the spin at a slightly higher speed than you need for the Cuban. This is because once you level out, you will likely be slowing down. Carrying a little extra speed will help you avoid slowing to a speed that is less than ideal for the Cuban in the airplane you are flying. Coming out with an extra 10 mph is probably a good rule of thumb.

Take a breath and resist the urge to rush into the Cuban. Again, look where it is on the sequence card. It is supposed to be on the right side of the box, so drive the airplane to the

far right edge of the box and then start the figure.

After the Cuban we are now flying downwind. We don't want to waste too much time before starting the next figure, which is the loop. However, we don't want to rush it either. Just like the spin we flew a few moments ago, we want to present it to the judges right in the middle of the box. Coming out of the loop we are still headed downwind into our next figure. This is the 180-degree competition turn and is the cross-box maneuver. Relax and don't rush into it. Remember the effect the wind was supposed to have on your direction of turn? When you are on the left side of the box, turn into the crosswind if there is any.

The last figure is the slow roll. The roll rate of your airplane will determine where you should start the roll. The important thing is that you are trying to center the entire roll in front of the judges.

Whew! Mental flying and preparation is as tiring as the real thing. If you have focused hard enough, your palms should be a little sweaty. All this thought and preparation, and we are not even in the airplane yet!

Now that we have a plan and are mentally prepared, let's go flying.

One of the most important things to consider when flying the sequence is how to enter the box. We want to enter the box where we planned, to compensate for any crosswind. One problem with entering the box in most aerobatic airplanes is the lack of downward forward visibility. When we are up at the top of the box, just seeing the box markers is a real challenge. If you can't see the box, how do you know when and where to enter it? To avoid that problem, fly a nice "base" leg while looking out the side at the box. If you're going to dive for speed, then back the base away from the box a bit. When you are just about where you want to be, do a nice tight 90-degree turn and enter the box.

So far, so good! We have the speed we want and entered in the right place. Start the first figure as soon as you are in the box. Pull back with a firm, but smooth pull to the 45. Be cautious not to pull so hard as to scrub all your energy. A nice 4g pull in most aerobatic airplanes should be about right. Once on the



Scott Westover

Great presentation requires knowing where you are relative to the judges line.



Rob Holland is the owner and operator of Aerial Advantage Aviation, an active IAC competitor and an airshow performer.

45, look out to the wing to hold the 45 line until it is time to cap off the maneuver back to level flight. Remember that when you level off you are going to be at a much slower speed, therefore requiring a higher angle of attack to maintain level flight. You don't want to be too aggressive in the cap-off or you will start descending as you fly off the top of the figure. As you know from the planning phase, you want to cap off at a speed that is slow enough so you don't go sailing all the way across the box trying to slow down for the spin.

You should cap off slightly above the speed you need to stall the plane for the spin. Pull the power back so you have just enough power to maintain level flight and altitude. This way when you are in the middle of the box you can just pull off the remainder of the power and be set up for the spin.

When entering the spin, be careful to not be descending while slowing down. Keep increasing your angle of attack to maintain altitude until

you reach the stall. Once you have the stall, pull the stick back and step on the rudder in the desired direction. Once recovered from the spin, take a quick look out to the wing and push the plane down to a vertical downline. For obvious reasons, don't spend too much time on the downline, but also don't rush it. After establishing a credible downline, pull to vertical with slightly more speed than is required for the next maneuver.

When setting up for the half-Cuban-eight, try to remember that you are just flying a loop—well, five-eighths of a loop anyway. It is very easy to rush the Cuban by thinking too much about the 45 downline and “pinching” (not floating over) the top of the looping portion of the maneuver. It is best to think of the half-Cuban as “mini-figures.” The first mini-figure is the five-eighths loop. This should be performed the exact same way you would perform any loop. The only difference is that we are going to push and stop the loop five-eighths of the way through it. The next mini-figure is the inverted 45 downline. “Set” the 45 inverted downline by looking out at the wing again to make sure you are actually on an inverted 45, and then look back out the front and pick a point on the ground in front of you to reference for the next mini-figure, the half-slow-roll.

Since we are starting inverted, make sure when you start the roll, you apply some rudder opposite to the aileron to counter adverse yaw and stay on heading. Once you have passed through about 45 degrees of roll, start coming in with rudder into the roll. Keep the point you are looking at on the ground in front of you. You want to finish the roll on a 45 upright downline, which is the next mini-figure. This portion of the 45 downline is going to be shorter time-wise than the first part due to the fact that we are now going faster.

The last portion of the half-Cuban-eight is a nice firm-yet-smooth pull-back to level flight. However, just like the vertical downline after the spin, you want to pull when you have the speed required for the next figure.

The loop comes after the half-

Cuban. Knowing where to look during the loop will help tremendously. Start by looking straight out the front during the pull. Keep looking forward until all signs of the horizon, including those in your peripheral vision, are gone. This will help you perform a nice straight pull without dropping a wing. By watching the horizon as long as possible, you can see and therefore correct any bank you may accidentally induce during the pull. Once you can't see anything to reference looking forward, look 90 degrees off to the wing.

As the loop progresses to about 30 degrees, before level inverted at the top, direct your attention back out the front and search for the horizon again. This is also the point at which you start “floating” the loop. Use the horizon out the front again to keep the wings level during the float.

Once the airplane is about 30 degrees nose-down inverted from the top of the loop, you can progressively start pulling again to finish the maneuver. You should also keep looking out the front at this point and reference the ground placement. Out of the loop, wait until you are near the edge of the box before performing the next figure, the 180-degree competition turn.

Break the competition turn into three elements. The roll in, the turn, and the roll out—with a slight pause between each. For the roll in, assertively yet smoothly apply aileron and rudder into the desired direction of the turn, rolling the plane to



Courtesy Rob Holland

There is a lot of work to be done before strapping yourself into the cockpit.

the desired bank angle. Somewhere between 60 and 75 degrees of bank is good. Remember, a competition turn needs to be 60 degrees of bank or greater. Make sure you use enough rudder to counter the adverse yaw of the ailerons.

Now neutralize everything for just a brief moment and allow a slight pause before the turn itself.

For the turn, look straight out the front to where the horizon intersects the cowling. Apply back-pressure to start the turn. Do whatever it takes to maintain your bank angle throughout the turn. Don't pull so hard that you increase your angle of attack and climb. Just keep the horizon on the cowling in front of you until you have turned to the desired heading. While in the turn take brief looks out the side to reference where you are in the turn so that you will stop it at the 180-degree point. For helpful tips on flying the competition turn, see the article by Greg Morris in the August 2006 issue of *Sport Aerobatics*.

Once on the desired heading, unload the elevator to stop the

turn and again pause for a second. Now roll out of the turn applying aileron and rudder to counter the adverse yaw until you are in level flight again.

The last figure is the slow roll. For tips on performing the slow roll, see my column in the October 2006 issue of *Sport Aerobatics*. Because we are *presenting* these figures to the judges, try to center the slow roll right in front of them.

Situational awareness is the key to flying a well-presented sequence. Flying the Primary sequence is a wonderful way to work on and increase situational awareness in the box.

“Wind plays a large role in determining how you’re going to fly each individual figure.”

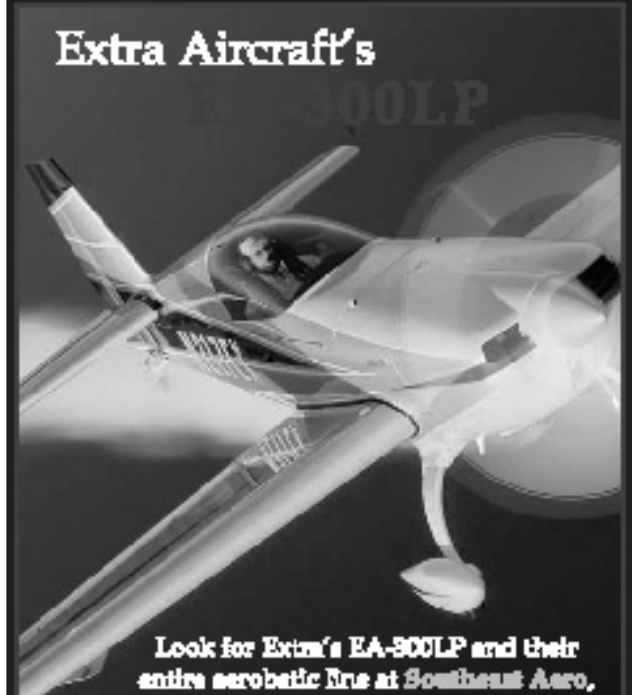
Throughout the flight, look at the box to reference where you are. Make sure you are where you planned to be—and visualize where you want to put the next figure, and note where the judges are because you’re presenting the figures to them. That’s all there is to it! If you have questions or comments, please e-mail me at AerialAdvantage@earthlink.net.

Rob Holland is the owner of Aerial Advantage Aviation (www.Aerial-Advantage.com) located in Nashua, New Hampshire, and is a member of the 2006 U.S. Advanced Aerobatic Team.



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SOUTHERN ILLINOIS UNIVERSITY

AEROBATIC TEAM

These competitors are “total aviators”

Photos courtesy of Ken Robinson



2006 Team Captain Gerald “Dave” Oliver.



SIU Aerobatic Team coach Charles “C-ROD” Rodriguez and sponsors Lori and Ken Robinson display some of the team’s hard earned recognition.

By Scott Westover

It is a good thing that Edward “Ty” Englehardt is not the kind of guy who takes no for an answer. Today, he might be considered the father, or at least the older brother, of the Southern Illinois University Aerobatic Team. The story starts in the fall semester of 2000, when students from the SIU Aviation Technologies program, where they study to become FAA Airframe and Power Plant mechanics, attended a recruitment meeting for the Flying Salukis, the National Intercollegiate Flying Association competitive flying team that represents Southern Illinois University Carbondale.

At that meeting, the applicants from the Aviation Technologies program learned that they could not represent SIU in any flying contest. They were encouraged to participate in non-flying events, but the competition flying was reserved for students enrolled in the professional pilot program. The group of aspiring competitive pilots from the Aviation Technologies program had other ideas. If they were going to clean bugs off windshields, then they were going to be the ones who put them there. All they needed was a little encouragement. That’s where Charles Rodriguez and Allan Englehardt (Ty’s father) came in.

Ty was a student in one of Charles Rodriguez’s labs where they would frequently discuss flying. When Charles asked Ty why he was not part of the Flying Salukis, Ty explained that Aviation Technology students were prohibited from flying for the team. Charles was surprised to learn about the restriction, and remembers being impressed with Ty’s enthusiasm for aerobatics:

“While in my class, Ty frequently wore an International Aerobatic Club jacket and T-shirts from the different contests he had flown in. He had been flying with his father, Allan, since he was a youngster. Soon conversations turned to encouraging other college students to undertake the challenges of competitive aerobatics. Ty then proposed to petition IAC to form a collegiate competition to determine which school has the top aerobatic pilots in the nation. His father embarked on a campaign to sell the idea to IAC officials. After some lengthy discussions about rules and the formation of teams, the IAC Collegiate Program took flight in 2001.”

Today, the IAC Collegiate Program consists of teams from the top-flight colleges in the country, including Embry-Riddle Aeronautical University-Daytona Beach, the University of North Dakota, and the United States Air Force Academy. The purpose of the program is to “...increase the interest level of college pilots in aerobatics, aerobatic competition, and the International Aerobatic Club.” These college fliers pursue two awards: the Collegiate National Championship Team Award and the Individual Collegiate National Champion Award.

Once the idea of the new SIU team was established, Ty was instrumental in recruiting and training Matt Boehm and Sean Roarty, the other two competitors from SIU during the first season. Charles Rodriguez, affectionately known as “C-ROD” to the team, became the coach. Allan Englehardt generously provided the team access to a Pitts and Super Decathlon for practice and competition, and the group went on to win the 2001 national title for collegiate



Working to make every maneuver precise has made me strive for more in my day-to-day life.

I want to accomplish more since I have started flying aerobatics. This has helped me get to where I am today, a citation training administrator for Cessna Aircraft Co. in Wichita, Kansas.

I plan to continue to move up in the ranks of aerobatic flying and to hopefully represent our country one day at the world level.

Tom Rybarczyk
2003, 2004, and 2005

**If they were going to clean
bugs off windshields,
then they were going to be the
ones who put them there.**



I was a member of the SIU Aerobatic Team from 2002-2004. I could say that flying aerobatics has made me a better pilot, a better A&P, increased my confidence, or even might someday help me get a job. But I really feel that learning to fly aerobatics has made me a more professional person, which in turn has bettered my chances of being successful in my aviation career.

I am part of a maintenance team for a fleet of 35 Cessna twins for a growing part 135 carrier. Most of the aircraft are older than I am, so there is quite a bit of maintenance being done at other airports, which allows me to use my commercial pilot certificate.

Caleb Robinson
2002, 2003, and 2004



Christina represents another first for the progressive SIU Aerobatic Team as the first woman pilot to represent SIU in the IAC Collegiate Program.

aerobatics, with Ty taking top honors as the country's best collegiate aerobatic pilot. That same year, Ty performed in three air shows in his Pitts S-2C.

The SIU Aerobatic Team was recognized by the state of Illinois for its accomplishment during 2001, and team members were further honored during an award ceremony at EAA headquarters at Oshkosh. There they met Tom Poberezny, along with sponsors Klein Tools and American Champion. That first year's success created momentum on which future SIU aerobatic pilots would build.

The 2002 team was formed by Matt Boehm, Sean Roarty, and Caleb Robinson. Matt served as team captain. The team took the national title in 2002 with Matt Boehm taking top individual honors. Ken Robinson, Caleb's father, became the team sponsor during the 2002 season.

In 2003, a healthy rivalry was born when the SIU club lost the title to Embry-Riddle. That loss focused the SIU team as it set its sights on the next season. In 2004, Tom Rybarczyk, Caleb Robinson, Nick Reinhardt and Joe Schuster added the U.S. National Aerobatic Championships to their competition calendar. Flying against seasoned competitors, Tom and Caleb competed at the Sportsman level and Joe at the Primary level. Tom came in second, Caleb took fourth, and Joe won the Primary category. Considering these three pilots were pushing and pulling a Super

Decathlon around the box while competing against Pitts, Extras, and the like, these results were truly outstanding. The team went on to win the collegiate championship that year, and after graduation, Nick entered the United States Air Force where today he applies his aerobatic experience in the flight training program.

Over the last five years, the SIU team has become a part of the fabric of the Illinois aviation community. The team's accomplishments are recognized during the Illinois Aviation Hall of Fame banquet, and the student group that sponsors the aerobatic team, the Rotor and Wing Association of America, was inducted into the Illinois Aviation Hall of Fame in 2006. In addition to sponsoring the aerobatic team, RWAA has organized and hosted numerous air shows, provided scores of aviation education camps for local schoolchildren, and given hundreds of EAA Young Eagles rides. Their contributions to aviation and aviation education have made a difference throughout the region.

The 2005 team consisted of three veteran pilots and one rookie. Jason Dusel served as team captain and trained newcomer Jon Abbott. Jon flew the family's Yak at the Primary level. Later that year, SIU again made the trip to Texas and managed to improve on the previous year's impressive finish. When the props stopped spinning, Jason Dusel was the national Sportsman champion.

In 2006, the team was realistic about its prospects. It was composed entirely of rookies. All the experienced aerobatic pilots had graduated and moved on to professional aviation careers. Prior to his departure to fly in Alaska, Jason Dusel provided a few aerobatic lessons to the new team captain, Gerald Oliver, and newcomer Andrew Bochnovic. Gerald proved to be a talented pilot and tirelessly worked to improve his sequences. He also trained fellow team members Bochnovic, Jeremy Brown, and Josh Smart.

The 2006 season focused on learning about the competition environment. As flying in competitive aerobatic meets was a new endeavor for the entire team, it focused on learning the scoring system and meeting with—and learning from—veteran IAC pilots. Needless to say, team members learned a great deal during each meet and received sound advice from experienced competitors. As the season progressed, so did the team.

The 2006 team began to plan

what had become an SIU aerobatic team tradition: the annual trip to Texas for the Nationals. The entire 2006 team competed at the IAC U.S. National Aerobatic Championships, and team captain Gerald Oliver took fifth at the Sportsman level and Josh Smart won the Primary contest. The 2007 team is currently being selected, and pilot Christina Mayberry has already earned a slot. Christina represents another first for the progressive SIU Aerobatic Team. She is the first woman flier to represent SIU in the IAC Collegiate Program.

Needless to say, a lot has happened in the world of collegiate aerobatics in a short time. The students who have been associated with this program are nothing short of exceptional. They are what Charles Rodriguez calls “total aviators,” as they study both maintenance and flight while developing interests in other facets of the aviation industry. They not only fly their Super Decathlon trainer, they also maintain the bird. Following graduation, team members have proven their



My involvement with aircraft began with the Southern Illinois Wings of Charity program. I began with virtually no aviation experience and ended with my private pilot's certificate. Joining the 2007 team is an opportunity to participate in something that I never have imagined could be possible.

I hope that I can be as important to this team as it has been to me, and I can become a role model for future female pilots with limited resources but unlimited aspirations.

Christina Mayberry
2007

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I currently work as a pilot/mechanic for Alaska Air Taxi. I am also responsible for performing some of the maintenance on our entire fleet, which includes Cessna 206/207, de Havilland DHC-2 (Beaver), DHC-3 (Otter), and Piper Navajo.

The winter months keep us busy hauling groceries and supplies into and out of villages and remote camps on the northern Arctic coast of Alaska, where all the oil drilling and exploration is currently taking place. Generally we stop operating at around -40°F. One disadvantage to moving up here is there are fewer aerobatic aircraft. Instead, everyone opts to have an aircraft on floats or that can get in and out of extremely short places.

Flying aerobatics has given me more precise control of aircraft and allowed me to fly in the nearly stalled/stalled region, which helps when getting into and out of a short strip.

Jason Dusel
2004, 2005
2005 National Sportsman
Champion



ability to succeed in the aviation industry, and their contributions go far beyond trophies and titles. As Charles Rodriguez says, "The industry benefits from the talents, skills, eagerness, and professionalism of these graduates."

Since its inception, the SIU team has depended on the generosity of team sponsors, pilots, and its coach. The local EAA 277 Chapter has provided support for the team when it has competed at IAC Nationals. There is no direct financial support from the university, and team members spend thousands of dollars of their own money each year to keep the team flying. Without the uncommon generosity of the team's sponsors—Capt. Al Englehardt during the first year and Mr. and Mrs. Robinson since 2002—these incredible dreams of flight would not be possible.

Looking Ahead

Over the past six years, participating in the IAC Collegiate Program has, without question, elevated the educational experience of SIU Aviation Technology students. Competing at IAC meets has been the "icing on the cake" in terms of maximizing the aviation experience during their college years. The success of the SIU team is linked to excellent "hand-me-down" training in combination with critical evaluations of each flight. Hard work and a deep commitment to excellence are major factors in the success of the team. Team members grow as they seek criticism regarding their performance and implement corrective measures. Graduates take these lessons for self-improvement with them as they enter the industry.

According to coach Charles Rodriguez, getting collegiate aerobatics off the ground was the first step. The next is to expand the program to include additional colleges. Ideas range from a more traditional college sports format in which colleges host one another for a contest to organizing an international contest where college teams represent their countries to determine the best collegiate aerobatic pilots in the world.

Of course, there are barriers to be overcome. For example, college administrators, including those who are running flight departments, need to be educated about the safety record of aerobatics. Many still view aerobatics as sheer danger or even "stunt flying." Practical considerations related to insurance liability and expenses provide an easy excuse for schools that are not yet ready to expand their programs. However, as the quality of the aviators minted in the competitive collegiate aerobatic arena becomes more widely appreciated, demand for graduates with aerobatic experience will increase. Collegiate aerobatics has proven to be a safe endeavor that develops piloting skills well beyond those learned in typical flight schools.

These are some of the reasons that should have sponsors flocking to these programs, according to 2006 team captain Gerald Oliver. When asked why sponsorship of the collegiate program is a good idea, he is quick with a thoughtful response: "First, take a look at our team and you will see that every past member is now actively involved in the aviation industry. There is no doubt that aerobatics gave them the boost they needed to jump-start their careers. Second, fly with any one of our pilots and you will find a high level of pilot proficiency. Not only are we comfortable in the recoveries of upright and inverted spins, but aerobatics teaches the mastery of energy management. Third, aerobatics teaches both discipline and teamwork, two things that are absolutely necessary to be successful in any area of life."

It was only six short years ago when Ty Englehardt, with a great deal of support, made the decision to "fly the airplane" rather than to bail out at the first sign of turbulence. The next six years promise to provide even more excitement—and perhaps another trophy or two. 🏆

For more information on the SIU Aerobatic Team, contact Ken Robinson at kr Robinson731@msn.com, or contact Charles Rodriguez at crod@siu.edu. For more information about the IAC Collegiate Program, visit www.IAC.org.



With more than 3,500 hours in all kinds of aircraft ranging from jet airliners to corporate jets, helicopters, and high-performance piston aircraft, my most valuable educational experience was as a team member and captain of the SIU Aerobatic Team. The skills I learned from the aerobatic team were leadership and judgment, both of which build the foundation for a professional pilot.

In the world of aerobatics, safety is very highly emphasized and every decision is scrutinized by others. As an aerobatic pilot you can't fly blindly. The limits of what the pilot and aircraft are capable of must be ingrained, and then the decision on how close a pilot is willing to get to those limits must be made. Decisions on whether to increase the strength of the aircraft by carrying less fuel or to carry extra fuel in case of an emergency must be weighed every flight.

Today, as a corporate jet captain, I make many of the same decisions daily. Leadership and good judgment are ingrained into members of the SIU Aerobatic Team, and the team provides the necessary experience to become a top-notch professional pilot.

Ty Englehardt
2001



The SIU Aerobatic Team got me where I am today, working as a director of maintenance in the air show industry.

I hope I can someday return the favor and honor those who helped me. The team that I am a part of now requires skill and confidence. Each person on that team understands that any one job is not more important than another.

Matt Boehm
2001, 2002

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and Aerobatics

History, perception, and a strategy for the future

By Mark Mattioli, Esq.

Sunday Morning Practice

Picture this: It is two weeks before the chapter contest. Weather and work have made it difficult to practice. There is some off-airway space about 10 miles to the south of the airport. When you first bought the airplane, this area was virtually uninhabited, but you have noticed that urban sprawl is slowly encroaching on your practice area. Ceilings today are lower than you would like, forcing you to practice between 3,000 and 1,500 feet AGL—well within the regulations and contest parameters, but you know noise increases dramatically the lower you fly. Your first figure is a wedge—a little negative on upline and shallow on the 45, but otherwise acceptable. You move on to the Immelman. You are slow to reduce power to get ready for the spin, and you are drifting a little farther than you wanted. Okay, now the power is back, and you wait for the stall and full rudder. You must have drifted more than you expected as your downline has you headed right for someone's backyard pool. You pull out at 1,500 feet and decide to call it a day.

'dirt bikers in the sky' with too much disposable income."

corresponding decrease. IAC chapters are constantly faced with complaints regarding noise, whether the chapter's practice areas are in nonwaivered space that complies with FAR 91.303 or even when the practice area is in a waived area pursuant to FAR 91.903. As this article will discuss, practicing in a "legal" area does not immunize us from scrutiny or complaints.

Noise issues involving airplanes date back to the golden age of aviation. More often than not, pilots have not fared well in these legal disputes. This article explores a few of these cases to arrive at some recommendations for avoiding noise problems.

Legal Theories Used by Landowners to Prohibit Aircraft Operations

Litigation by citizens designed to prohibit airplane noise started with early flight. Property owners have been filing lawsuits against aircraft operators under common law theories of "trespass" and "nuisance." Both of these theories are very old "common" or judge-made laws that date back to early English doctrine. Under antiquated theories of property law, ownership of land was believed to extend from the ground to the "periphery of the universe."

Two gentlemen from Ohio, Wilbur and Orville Wright, irrevocably forced a change to that notion in 1903 when they successfully flew a powered biplane at Kitty Hawk, North Carolina. As any lawyer will tell you, common law develops slowly and ancient "common law" doctrines could not keep up with the rapid development of the airplane. It was not until 1946 that the United States Supreme Court declared airspace to be part of the "public domain."^a

Most current actions against pilots and airports are based on another common law theory of nuisance. A "nuisance" is described as the substantial interference with the property rights of another that is intentional or at least unreasonable. The interference must be substantial, as the mere flight over another's property is not sufficient to constitute a nuisance. One federal district judge in New Jersey framed the issues as follows: "There must be evidence that the aircraft flights were at such altitudes as to interfere substantially with the landowner's possession and the use of the airspace above the surface."^b The following three cases illustrate these notions.

Case 1: Biplane Over "Lordvale"

One of the earliest cases against airports and pilots based on theories of trespass and nuisance dates back to 1928 and involved a claim by an affluent landowner in Massachusetts. There, a group of landowners led by Harry Worcester Smith filed an action against the New England Aircraft Co. and others for nuisance and trespass seeking to enjoin the defendants from operating their aircraft near Smith's 200-plus-acre estate, "Lordvale."^c

The allegedly offending aircraft were a "biplane" with a 90-hp engine and a "monoplane" with a 220-hp engine. In rejecting the complaint, the court noted that the noise of the aircraft did not interfere materially with the Smiths' physical comfort or cause the Smiths or their guests to suffer from "fear or fright." In fact, the court did not recognize any evidence of damage to the use of the property. Stated the court: "I find the plaintiffs are persons accustomed to a rather luxurious habit of living, and while

The residents below either enjoyed the brief show, or there is a call waiting for you back at the airport. After you land, the airport manager wants to talk to you. Seems someone has complained about that "stunt plane" doing low-level "treetop stunts" over their pool party. You think, "I complied fully with Section 91.303 pertaining to aerobatic flight," and clearly the FAA would believe the word of a trained pilot as to altitude over the uninformed estimation of a non-pilot. You are untouchable, right? Wrong.

A common misconception in the aviation world is that the FARs preempt state laws regarding aviation activities. As the population continues to increase, the areas where we can fly without complaint will suffer a



IAC member Mark Mattioli understands the legal issues related to noise and aerobatics.

the noise from airplanes in flight over their premise has caused them irritation and annoyance, yet gauged by the standards of ordinary people this noise is not of sufficient frequency, duration, or intensity to constitute a nuisance.” Accordingly, the court rejected the landowners’ claim.

Case 2: No “Stunts” Over Chester County, Pennsylvania

The results were not as favorable in a case from Chester County, Pennsylvania, decided in 1932.^d This case involved aerobatics performed over Sky Haven Airport near West Chester, Pennsylvania. Though the airport was appropriately licensed by the Pennsylvania Aeronautics Commission, and there was no indication that any of the operations at the airport were improper, the court enjoined the operation of Sky Haven Airport on nuisance grounds.

According to the reported decision, “the unmuffled engines of aircraft were tuned up and run with loud and unpleasant noises; various other acts of similar nature, including ‘stunts’ in the air, were performed by the defendant(s).”

Moreover, “on one occasion a canvas cover and cushion fell on the (plaintiff’s) property from the plane of the defendant...operating from said airport, while he was doing a stunt at the height of 3,000 feet.” The court

ruled, “There can be no question that the noise of planes warming up, sometimes at early hours in the morning, and of those flying at such low altitudes as testified to over the properties of (plaintiffs) is very objectionable and annoying. Frequent flights of a few minutes’ duration are made, especially on Saturdays, Sundays, and holidays, just when plaintiffs are particularly anxious to enjoy the peace and quiet of their country homes.... (One plaintiff) testified also that the planes frequently passed about 50 feet over his house—not necessarily, it seems, while taking off or landing—sometimes swooping down close over his guests using the swimming pool and shooting trap, and (another plaintiff) testified to the same effects as regards his dwelling. The noise was described, among other things as ‘terrific,’ as frightening children, and as so loud as to interfere with conversation and the use of the telephone in both dwellings.”

Of particular note, the flights were conducted over a hospital. Although the airport was closed as a result of the lawsuit, it was subsequently purchased in 1940 and reopened as West Chester Airport. Currently, it operates as Brandywine Airport, N99.

Case 3: Commercial Operations Approved in Newark, New Jersey

While the private airport operator

in West Chester, Pennsylvania, did not fare well, commercial operators have fared much more favorably in litigation. In *City of Newark vs. Eastern Airlines*,^e the city of Newark and surrounding areas attempted to enjoin Eastern Airlines and other major carriers from operating out of Newark Airport under theories of nuisance and trespass. The court rejected the claims, noting that the airlines were operating under specific direction from air traffic control, and that the carriers were authorized and required to maintain transportation service between New York, New Jersey, and other destinations. Further, according to the court, the operating specifications of each airline included route limitations, and takeoff and approach patterns. The court concluded, therefore, that the plaintiffs were in essence seeking a deviation from those proscribed procedures, which was an issue for the Civil Aeronautics Administration, the predecessor to the FAA. In addition, the court held that there was insufficient evidence to find for the plaintiffs with regard to the trespass claim.

Similar suits have appeared from time to time up to the present day, mostly against airports. In many instances, the landowners prevailed and restrictions were placed on the defendant airport that altered the approach path or departure procedure for the particular airport. The key strategy for pilots is to document the frequency of the flights, altitudes, and duration of the flights. Potential liability for nuisance and trespass remain today a viable threat against aircraft operations, especially aerobatic operations that are typically confined to a small space, i.e., the aerobatic box.

Regulation of Flight vs. Property Rights

A common misconception regarding aviation operations is that, so long

Noise issues involving airplanes date back to the golden age of aviation. More often than not, pilots have not fared well in these legal disputes.

as the pilot is operating within the confines of the Federal Aviation Regulations, any such operation is legal and the pilot cannot be held liable for these authorized actions. In legal parlance, the belief is that the Federal Aviation Regulations pre-empt any state law seeking to regulate aviation operations. This notion is only partially true, as federal law pre-empts some but not all state law where aviation activities are concerned.

The conflict between federal aviation law and state tort law was the issue facing aerobatic pilots in Massachusetts in one well-publicized case. A group of local citizens led by Robert F. Casey Jr. brought suit against some very well-respected members of the aerobatic community for nuisance, alleging that the defendants were engaging in “noisy and dangerous” “stunt flying.”¹ The case was brought originally in state court in Massachusetts but was “removed” to federal court on the grounds that the issues in the complaint required the interpretation of federal law and hence created a federal issue.

By way of background, a case may be brought in federal court where it presents a federal issue or where there is jurisdiction created by diversity of citizenship (i.e., the parties reside in different states). Even if the complaint raises only state law issues, it may be removed where state law is completely pre-empted by federal law.

A defendant may remove a case that was filed in state court if it could have been filed in federal court. Because of increased docket congestion in the federal courts, it is not uncommon for the federal courts to view narrowly the jurisdictional requirements and thereby refuse to hear the matter in federal court. From a litigation strategy standpoint, it is often preferable to have the case heard in federal court, especially where the court must interpret federal law. There is also a perception that some state courts are plaintiff-friendly, and that some state court judges are not as sophisticated in federal issues as are their federal brethren.

The defendants argued that Congress, through the Federal Aviation Act, had completely pre-empted state law with regard to the regulation of airspace and flight and with regard to noise issues. These regulations are codified in the FARs. The court, relying on a decision from the very well-respected 7th Circuit Court of Appeals, held that the Federal Aviation Act did not completely pre-empt state law. It distinguished between complete pre-emption, where Congress explicitly prohibits any state law regarding the matter, and conflict pre-emption, where the state law conflicts with a

federal law or regulation. In the latter, because federal law controls over state law, the federal law becomes a defense to the conflicting state law.

For example, in the Casey matter, to the extent that the court was to determine that the plaintiffs were seeking to apply a state law that conflicted directly with federal law, application of the federal law would provide a defense to the state law claim. As with most legal issues, however, there would be considerable argument over whether there is in fact a conflict between the federal rules and the state law. Thus, while the defendants in Casey lost the battle over where the case would be heard, they by no means lost the war on the ultimate issues and were prepared to mount a formidable defense.

Compounding the whole noise debate is the fact that the perception of noise is highly subjective. Part 36 of the FARs covers noise issues. Nevertheless, these regulations do not specifically address noise issues concerning aerobatic activity. To this end, FAR 36.501 regulates noise limits for propeller-driven small airplanes. Specific limits are found in appendices F and G of Part 36. These appendices govern noise limits for flights at 1,000 feet and for takeoff. For overflights at 1,000



Robert Bismuth

To the average ground-bound observer, different airplanes may appear to be the same, creating the perception of one pilot constantly buzzing the neighborhood.



Aerobatic contests and other aviation events such as EAA AirVenture Oshkosh provide a great opportunity to educate the public about our sport.

feet, aircraft certificated after 1975 may not exceed 80 decibels when corrected for temperature and other variables. By way of comparison, a heavy truck has a perceived noise level of between 95 and 105 decibels.

So the question is, "What can we do to prevent complaints and effectively deal with existing complaints?" There may not be one solution. It is clear, however, that we need to do more. It starts with following the rules and simply being a good neighbor. Partnering with your local airport is a good idea as well.

Follow the Rules

Foremost, we must follow the rules. We already agreed to this when we obtained our pilot certificates. More importantly, failure to do so reflects negatively on all pilots. Perhaps most importantly, we need to follow the rules because not doing so could result in potential liability. You can certainly expect that a failure to at least abide by 91.303 would provide very powerful evidence to a judge or fact finder that such flights constitute a nuisance.

This is a very simple, yet powerful, step. To the public, a Pitts is a Pitts. In his mind, the biplane a resident may see on Sunday flying over his house is the very same biplane he saw on Saturday buzzing his neighborhood. Undisciplined aerobatics is probably the worst thing any pilot can possibly

do and will cause the most damage to our sport. That very same aerial sequence over your house that may impress your spouse or children could appear reckless to the neighbors. These actions taint all pilots. While the overwhelming majority of IAC members abide by these rules, we all know some who do not. It is our obligation to explain that this type of behavior is inappropriate.

Similarly, do not perform aerobatics in the pattern at an airport without a waiver. This may sound like common sense, but we have all read about accidents resulting from this decision. A roll to inverted over the runway may impress you or an untrained observer, but it will not impress other pilots. It will only take one midair collision (regardless of fault) to initiate a media storm that could result in knee-jerk legislative action banning all aerobatics.

The best approach may be to consider practicing in a waived box. Recall that the city of Newark court held in favor of the defendants in part because the airline was operating pursuant to specific requirements. There may be some benefit to having aerobatic activity specifically defined in an appropriate waiver in some level of detail.

Be a Good Neighbor

When a complaint arises, the best way to be a good neighbor is to listen and understand the concern. Many

issues can be handled this way. Often, we can simply avoid flying over a particular location if we know there is a reason to avoid it. Even easier, we can fly higher, as noise decreases significantly with increased altitude. If possible, avoid flying over the same area all the time. In addition, at least in the Northeast, some flight standards district offices are reluctant to grant waivers above 3,500 feet as this may conflict with ATC routing. Nevertheless, it is important to understand why individuals are complaining. The attitude that one has a waived box and thus can fly anytime he or she pleases does not solve the problem.

Partner With Your Airport

Having the support of your local airport is crucial. Remember that the airport manager is typically the one who receives the complaints. Working with the airport can provide the necessary support for successful aerobatic activity.

Our contest is held at my local airport. The contest is, regardless of how hard we try, disruptive to operations. At one point, there were two helicopter schools operating out of the airport. Our contest box interfered with these operations, but we were able to work things out with schools. Certainly, we do not make friends among fellow pilots by disrupting the operations of a school, especially where the instructors are attempting to make a living. Waiver or no waiver, we need to be mindful of the disruptive nature of our operations, especially during contests.

Understanding the issue of noise leads to a global recommendation—explain why we do what we do. To the public, we are often viewed as a bunch of "dirt bikers in the sky" with too much disposable income. They see no usefulness or purpose in aerobatic flying. Unfortunately, we as a group do little to alter this perception. IAC has among its members some of

the best pilots. There is a wealth of knowledge and experience among our ranks. Most of us became involved in aerobatic flying because we recognized that aerobatic flying makes us safer pilots. Aerobatic flying perfects stick-and-rudder skills that, in today's world of glass panels and fear of spins and unusual attitudes, are rarely taught. Aerobatic flying is the last bastion of these fundamental skills.

We must step up our efforts to educate the public, and other pilots, about why we fly aerobatics. There is simply no reason why, before a contest, we cannot speak to the media to explain what is going to happen, and explain why we do what we do, emphasizing safety issues. If the public understands that there is a safety issue involved, there may be fewer complaints. Educating those folks over whose neighborhoods we are flying as to the purpose of what

we do might help them appreciate what they hear.

We can all participate in this regard. It is easy to find a group willing to listen about airplanes. Many, even if they would never strap into an airplane, have some level of curiosity. We need to take every opportunity we can to educate. Conduct safety seminars and invite non-aerobatic pilots. We have started to take this initiative in my own chapter (IAC 52), and at a minimum it has started to pay dividends in terms of airport relations, recruiting new members, and in keeping existing members involved. ☺

DISCLAIMER: The opinions contained in this article are general, do not constitute legal advice, and cannot be relied upon regarding any specific legal issue that may be faced by the reader. In such cases, the reader is directed to seek appropriate legal advice.

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(Endnotes)

a United States vs. Causby, 328 U.S. 256 (1946).

b City of Newark vs. Eastern Airlines, 159 F. Supp. 750, 760 (D.N.J. 1958).

c Smith vs. New England Aircraft Co., 170 N.E. 385 (Mass. 1930).

d Gay vs. Taylor, 19 Pa. D & C. 31 (Chester Co. 1932).

e 159 F. Supp. 750 (D.N.J. 1958)

f Casey vs. Goulian, 273 F. Supp.2d 136 (D. Mass. 2003).



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Ask Allen

A master rigger answers your questions about parachutes ... and seat belts

By Allen Silver

Q: How should I ship my parachute when it's due for a repack?

A: First, let's go over how *not* to ship your parachute! I have had parachutes arrive at my door in nothing more than the nylon carry bag, while others come in bombproof containers with special opening instructions that would confuse a Rubik's Cube expert.

Some parachutes arrive in well-traveled suitcases. Some come packed in Styrofoam chips that cling to everything. Others have been diligently packed in a box with what seems like a pound of tape sealing the top and no tape at all on the bottom of the box. In one instance, my UPS driver handed me a parachute that was in no box at all! Fortunately, there are few parachute riggers in this part of the world, so the UPS driver was able to figure it out.

Now, here is the proper way to do it. Find a shipping box that will fit your parachute snugly. Some riggers will even give you one! Remember, just like shipping a gift to a loved one, if the box is not filled out, it could get crushed when it is on the bottom of the pile in the shipping warehouse. Use paper or bubble wrap to fill up any void, but do not use Styrofoam chips. Besides sticking to everything and being an absolute pain to clean up, they can get lodged in the ripcord cable housing and make it difficult or impossible for you to pull the ripcord. This goes for wood shavings also. And, please do not use your daily newspaper for packing material. While I enjoy getting caught up with neighborhood gossip from across

the country, the ink can rub off onto your parachute.

If you insist on cushioning your parachute for its journey to the rigger, then use bubble wrap or special paper used for packaging. Your parachute will arrive intact if it is in a proper box. Remember to ship your parachute in its carry bag (if you do not have a carry bag, use a plastic garbage bag) just in case the box gets wet or contaminated in some manner. Many of my customers slip the carry case inside a garbage bag just to be safe.

Since we are talking about shipping your parachute for a repack anyway, let me make a suggestion. Practice pulling that ripcord. In the off chance you need it for real someday, it would

be good to know how it feels to actually pull the handle. Just don't forget to include all the parts that come flying out including the ripcord and any closing loops. You may also wonder what to do with the now-three-foot-long spring-loaded pilot chute that popped out halfway across the room. Just compress it into some plastic bags from the supermarket and tie or tape it shut. Make sure no tape gets on the nylon material. The adhesive will weaken nylon over a short period of time. This is also a great time to remove any sheepskin or sweat pads for cleaning if your parachute is equipped with them.

Finally, remember to put your contact info on a tag tied to the parachute in case all of the above fails.



Correctly packing your parachute for shipping protects your investment.

Photo courtesy of Allen Silver



Q: How often should I replace my seat belts in my aircraft?

A: That's an easy one...every time they break! Just kidding! Surprisingly, there are no regulations for the service life of seat belts. But that is no excuse for a lack of common sense. Like your parachute, proper maintenance is essential to safety. If you are not hard on the belts, you should be able to get five years out of them before they need to be replaced. When the webbing becomes really stiff and hard to adjust through the friction adaptors, or if the material is faded from extensive UV exposure, then it is time to spring for a new set. This means a whole new set, not just re-webbing the existing set using the old hardware. Over time, the knurled bars on the friction

adaptors become worn smooth and the webbing will slip. Did you know that the hardware is the weakest link in the belts? The last thing you need is a pretty set of belts with brand new webbing, and the metal hardware fails from fatigue.

Thank you for your questions, and keep them coming. And by the way, if you do send me Styrofoam

peanuts, expect a double batch to be sent back to you. That's my way of returning the favor. Happy vacuuming! ☺

Allen Silver is the owner of Silver Parachute Sales and is always available to answer your questions about parachutes. Send your questions to Allen@SilverParachutes.com.

“ Did you know that the hardware is the weakest link in the belts? The last thing you need is a pretty set of belts with brand new webbing, and the metal hardware fails from fatigue. ”

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mishaps data

Compiled by Bruce Johnson

MISHAPS BY MONTH

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2005	0/0	1/2	2/2	1/1	1/2	2/2	3/4	1/1	1/1	0/0	0/0	0/0
2006	0/0	1/2	1/1	1/0	1/1	1/0	0/0	1/0	0/0	1/1	1/1	1/2

MISHAPS BY YEAR

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Mishaps	20	26	21	24	20	18	12	9	15	9	10

Numbers depict accidents/fatalities of total accidents in the U.S. by aerobatic aircraft. Accidents included are only those which occurred during aerobatic maneuvering (including air shows) or during an IAC-sanctioned competition.

A count of aerobatic mishaps for 2006 shows there were 10 accidents and nine fatalities for the year. The majority, as with most years, has low altitude as the major contributing factor. Be it air shows, or what the National Transportation Safety Board (NTSB) terms "ostentatious displays," altitude below you is the best insurance you can acquire.

FINAL

Accident occurred Sunday, May 14, 2006, in Sharpsburg, Georgia.

Probable Cause Approval Date: October 3, 2006

Aircraft: Taylor Skybolt, Registration N78BJ

Injuries: 1 Fatal

History of Flight On May 14, 2006, at 1845 Eastern Daylight Time, a Taylor Skybolt, N78BJ, registered to a private owner, operating as a 14 CFR Part 91 personal flight, collided with trees and the ground while performing aerobatic flight in the vicinity of Sharpsburg, Georgia. Visual meteorological conditions prevailed, and no flight plan was filed. The airplane was destroyed. The private pilot was fatally injured. The flight originated from Newnan Coweta County Airport, Newnan, Georgia, on May 14, 2006, at an undetermined time.

A friend of the pilot was in his yard when he observed the airplane approach his location. The airplane circled his house to the left about three or four times at about 500 feet. The witnesses observed the airplane begin a high-speed pass by lowering the nose to the ground and descending down to 200 to 300 feet at a very high rate of speed. When the airplane reached the vicinity of a tree line heading eastbound, the airplane was observed to initiate a pull-up maneuver and made a snap roll to the right. The airplane went inverted and disappeared from view behind the tree line followed by an impact sound.

Another witness stated he was in his front yard when he observed a biplane make a low pass over the trees just behind his house at a high rate of speed. The witness observed the airplane start a climb to a higher altitude followed by a barrel roll. At the bottom of the roll, the airplane leveled out at a high rate of speed and went inverted as if it was attempting another roll. The witness described the turns as controlled and similar to an air show maneuver. The airplane disappeared from view followed by the sound of an impact.

Personnel Information Review of information on file with the FAA's Airmen Certification Branch, Oklahoma City, Oklahoma, revealed the pilot was issued a private pilot certificate on April 22, 2005, with ratings for airplane single engine land. In addition, the pilot held a mechanic certificate with ratings for airframe and powerplant issued on October 4, 2005. The pilot held a third-class medical, issued on March 10, 2006, with no restrictions. Review of the pilot's logbook revealed the pilot had accumulated 280 total flight hours, of which 81 hours were in the Skybolt. The pilot's last flight review was conducted on March 31, 2006.

The pilot recorded one dual training flight with an aerobatic instructor on September 24, 2004, for 0.8 hours. Further review of the logbook revealed the pilot had conducted aerobatic flights consisting of aileron rolls and loops on August 27, 2004; September 12, 2004; December 21, 2004; April 4, 2005; July 20, 2005; September 11, 2005; and January 28, 2006, for a total of 8.5 hours of solo aerobatic flight. The pilot's last flight in the Skybolt before the

accident was on February 28, 2006. The pilot's last recorded flight in the logbook was on April 24, 2006, in a Cessna 525A.

Aircraft Information Review of the airplane logbooks revealed the last annual inspection was conducted on January 14, 2005. The tachometer time at the annual inspection was 19 hours. The tachometer time at the crash site was 43.1 hours. The Hobbs meter at the crash site was 51.0 hours, and the airframe total time was 51 hours. The altimeter encoding system and static system check was performed on December 28, 2005. The airport manager at Newnan Coweta County Airport stated the airplane was refueled on May 11, 2006, with 10 gallons of 100 low lead fuel.

Meteorological Information At 1852, the surface weather observation at Hartsfield – Jackson Atlanta International Airport, Atlanta, Georgia, located 20.1 nautical miles northeast of the crash site was wind 340 degrees at 14 knots, visibility 10 miles, few clouds at 6,500 feet, scattered clouds at 12,000 feet, temperature 72°F, dew point temperature 46°F, and altimeter 29.85.

Wreckage and Impact Information The wreckage was 200 feet from the power line located at the end of Shelly Lane in the vicinity of Sharpsburg, Georgia. The airplane collided with the top of several trees in a descending 45-degree nose-down attitude on a heading of 180-degrees magnetic. The propeller spinner received damage. The propeller assembly remained attached to the propeller crankshaft flange. Both propeller blade tips were bent aft 6 inches inboard of the propeller tips. One propeller blade exhibited "S" bending. The engine assembly was damaged. The starter impacted the engine oil sump and a 4-inch hole was present. The fuel lines were disconnected, and fuel was present in the fuel lines.

Examination of the wreckage revealed the fuselage was on its left side. Continuity of all flight controls was confirmed from the cockpit aft to all flight control surfaces. Both wings, horizontal stabilizers, and the rudder assembly separated from the airframe. The fuel tank was ruptured, and the main landing gear was damaged.

The engine assembly was examined by the FAA on May 17, 2006. Both magnetos were rotated, and no anomalies were noted. The rocker covers were removed, and the propeller was rotated by hand. Compression and suction was obtained on all cylinders. Continuity was confirmed from the crankshaft to the rear gears.

Probable Cause The National Transportation Safety Board determines the probable cause of this accident as follows: the pilot's loss of control while conducting aerobatic flight. Factors in the accident were the pilot's ostentatious display, and lack of recent and total experience in type of operation.

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meet a member

By Scott Westover



Wes Liu, president of IAC 35, flashes a smile from the cockpit.

Courtesy Weston Liu

Name: Weston Liu, Chapter President, IAC 35

Home State: New Hampshire

Airplane: 1974 Pitts S-2A

What drew you to flying?

Like most kids, I was fascinated by flying. I tried to fly a Cox Li'l Stinker .020 control line model as a child. Unfortunately I hit my neighbor's house. The good news is that I fly better as an adult.

What was your first experience with aerobatics?

In December of 1980, I found myself in Northampton, Massachusetts. I needed a BFR, and Tom Laury offered an introduction to aerobatics and a BFR in a Cessna 150 Aerobat. That day we covered loops, rolls, and spins.

How did you obtain your airplane?

In 2001, I wandered around the back of the IAC building at the Oshkosh fly-in and discovered a 1974 Pitts S-2A. After 20 minutes of talking to the owner about the airplane, it became available to buy.

Tell me about a person in the sport you admire.

This sport attracts unique and special characters. In the New England area, I have to say that Dennis Sawyer is "the man." When I get into a new aspect of aerobatics, if I can get oriented enough to ask a coherent question, he always has the answer. He always finds time to keep the aerobatic community flying and is generous with his time, talent, and tools. I find that generosity everywhere, from Alan Cassidy to John Morrissey to Jay Hunt.

How does your family feel about your aerobatics?

Ann, my wife, is wonderfully supportive. She flies her own Cessna 150 and enjoys the occasional loop and roll in the Pitts.

Where would you like to see yourself going in the sport?

For me, aerobatics is about fun and camaraderie. Acro practice is an excuse to fly almost every nice day. I am currently working on the requirements for national judge, and was recently drafted to become the chapter president for IAC 35. It would be nice to fly in the Nationals once, and my ultimate goal would be to receive a "10" on any figure from Guenther Eichorn.

CONGRATULATIONS!

to the members
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Back row from the left: Dan Clark, David Martin, Goody Thomas, Robert Armstrong, Zach Heffley, Michael Racy
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