

**SPORT**

April 2013

# **Aerobatics**

OFFICIAL MAGAZINE of the INTERNATIONAL AEROBATIC CLUB

## **Your Toughest Judges**

- A Story of Love and Fate
- A Tribute to Curtis Pitts
- Staying in Bounds



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*. . . people who opt for an aerobatic ride have self-selected for what they hope will be an exciting experience. You can give them a thrilling ride.*

— Bruce Williams



## THE COVER

Bruce Williams flies an aerobatic maneuver. In this issue he writes about giving rides.  
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**REGGIE PAULK**  
COMMENTARY / EDITOR'S LOG

## A Smorgasbord

### The promise of renewal

**IT'S APRIL AND THAT MEANS** competition season is in full swing. If you're even thinking of dipping your toe into the competition arena, whether as a volunteer or competitor, make sure to check out the competition calendar at the end of this issue to see which contests are nearest your location. It's always

And don't forget  
to think about the  
upcoming World  
Unlimited contest being  
held after Nationals in  
Texas this year.

worthwhile to show up to a contest as an observer to get a feel for how the process works. And don't forget to think about the upcoming World Unlimited contest being held after Nationals in Texas this year.

If you haven't had a chance to check out the IAC's new website, you're really missing out. The entire experience is the culmination of months of hard work by dedicated volunteers who put out a top-

notch product. The minor problems encountered with the launch are a testament to the thorough job done by the WEB team, and my hat is, again, off to them.

This month's issue features an article by a relative newcomer to the competitive aerobatic scene. Doug Jenkins was still wet behind the ears when he flew to Nationals to enter his open-cockpit Pitts into the Primary Category of competition at Nationals last year. He gives us his beautiful rendition of the transition from military flying in Afghanistan to the thrill of flying his never-before-seen yellow biplane on return to the States. I had the pleasure of speaking with Doug at Nationals and the humility he displays in his writing is genuine.

I live in the high Rockies of Colorado, and there are still several feet of snow on the ground, but I look forward to sweating it out at Nationals and the Worlds while rubbing elbows with the fine folks who make up this wonderful little club. As the snow melts and the willows begin to bud, the warm months of spring beacon with their promise of renewal. I wish all of you a pleasant spring!

**IAC**

# Non-Flying Awards

## NOMINATIONS SOUGHT

Each year, the membership of the IAC nominates outstanding volunteers to be recognized for their contribution to the sport of aerobatics. The award winners are selected by a secret ballot of the IAC Board of Directors.

To nominate an IAC member, please visit (<https://www.iac.org/award-nomination-form>) to download an IAC nomination petition or to submit a nomination on-line.

Submissions due by June 25, 2013.

Winners announced at AirVenture Annual IAC meeting August 2.

### Frank Price Cup



Purpose of the award is to recognize the person who has contributed the most to the sport of aerobatics in the previous year. The award is presented annually and will be selected by a secret ballot of the IAC Board of Directors. Nominations can be submitted by any IAC member. The award was conceived and donated by R. J. Rouse of Texas. It was created to recognize outstanding individuals in aerobatics and in honor of aerobatic pioneer Frank Price, the first American to compete in the World Aerobatic Championships.

### Robert L. Heuer Award for Judging Excellence



Member Sam Burgess of San Antonio, Texas, conceived the idea for presenting a trophy to the outstanding aerobatic judge each year. He provided the permanent trophy to recognize the outstanding achievements made to competition aerobatics by the judges.

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The Award is given annually for outstanding performance as an aerobatic judge during the contest year. General guidelines, though not requirements, for the award include National Judgeship and having judged a minimum of three contests, one of which should have been the IAC Championships or the U. S. Nationals.

### Curtis Pitts Memorial Trophy



This award was donated by the Pitts family in the memory of Curtis Pitts. From the first design called the "Little Stinker" in 1944 to the Model 14 designed just before his death in 2005, Curtis Pitts was one of the most prolific aircraft designers in aviation history. His designs, and their descendants, forever changed the world of aerobatics.

### Kathy Jaffe Volunteer Award



This award recognizes an outstanding volunteer during the previous year. The award was donated in memory of Kathleen

Jaffe. Her spirit and enthusiasm for aerobatics and the aerobatic community were truly remarkable. She was president of IAC Chapter 52, contest director, newsletter editor, and contributor to *Sport Aerobatics* magazine. Kathy also gave lectures to everyone from aviation related groups to schoolchildren on the joy of flying and especially aerobatics. She was also a competition pilot. She died in 1999.

### Harold E. Neumann Award for Outstanding Contribution as a Chief Judge



The family of Harold E. Neumann has provided the permanent trophy in 1998 to recognize the outstanding chief judge and to honor the name of

Harold E. Neumann, Collier Aviation Trophy recipient, Thompson Trophy Race winner, active IAC competitor and judge until well into his 70's. The Award is given annually for outstanding contribution as a Chief Judge during the prior contest year. General guidelines, though not requirements, for the award include a person known for leadership qualities and fairness on the judges line.

IAC



**Flying**  
for your

**Toug**  
**Judg**  
**gg**

PAT DULANEY

## Introduction

Regional. National. Sportsman. Advanced. Unlimited. In the aerobatic community, those words evoke competition, *the* reason for flying aerobatics. But even if we don't fly at contests, we're all engaged in another intense challenge: attracting new members to the IAC and, equally important, winning friends for aerobatics, both among our fellow aviators and the general public.

For a dozen years, I've given aerobatic rides and training to pilots of all levels of experience. I've also taken many thrill-seekers aloft, often for their first hop in a small airplane.

Such flights can be the best way to introduce the public and potential IAC members to aerobatics. The experiences can build positive buzz for our niche of general aviation, and, one by one, help the nonflying

community understand what we're doing up in the air.

Unfortunately, first aerobatic flights too often have the opposite effect. Superficially, aerobatic rides resemble the media rides that air show stars give before big events. But first aerobatic flights—like introductory lessons at flight schools—shouldn't overwhelm or intimidate. We've all heard stories about intro lessons gone bad. Instructors, bored with straight-and-level cross-countries in Skyhawks or eager to show off their skills sometimes wander off-script and yank-and-bank into aggressive steep turns, zoom through 0g arcs, or demonstrate stalls—all during a first flight that sends potential customers wobbling out of the lobby, vowing never to return.

Of course, people who opt for an aerobatic ride have self-selected for what they hope will be an exciting experience. You can give them a thrilling ride. That doesn't, however, mean that you should put them through an advanced aerobatic sequence as if you were flying for contest judges. In fact, it's imperative to remember that during aerobatic rides *your passengers are the judges*. You're not competing against the catalog of figures or other pilots—your goal is to leave friends and customers with a positive impression that they'll pass along to others. And make them want to come back for more.

Here, then, are some guidelines and procedures that I follow when introducing aerobatics.

## Aircraft

I fly an Extra 300L. My customers love the airplane's superb visibility and its solid feel and thoroughbred performance. The machine gives them confidence, especially as I explain its features, and it accommodates a wide range of passengers. But

any aircraft approved for aerobatics will do, provided it is obviously well-maintained and flown within its—and the pilot's—limitations.

## Preflight Interview

Approach an aerobatic flight as if it were a lesson—even if it's just a ride. I begin by asking passengers about their flying background, what they'd like to do during the flight, and why they are interested in aerobatics. I typically have this conversation in the comfort of the FBO or flight school lobby, away from the noise and distractions of the ramp.

Last summer, my passengers included a retired Boeing engineer celebrating his 70th birthday. He wanted to experience lazy, Tex Johnston-style barrel rolls and to fly inverted. He wasn't interested in loops, hammerheads, Cuban-eights, or other figures—anything that registered more than about 1.5g.

Another passenger was a young man studying aeronautical engineering. His goal was to capture video that showed his ability to handle high-g turns to earn bragging rights over his brother.

I flew a couple of young women who, after trying roller coasters and parasailing, simply wanted to do something different.

Another young woman was married to an Air Force pilot. The couple enjoyed adventure travel, and she wanted to learn more about his life in the air.

Several customers received a ride as a birthday or anniversary present from their partners—sometimes as a surprise revealed only after they'd arrived at the airport.

During this part of the preflight conversation, I emphasize that aerobatic maneuvers aren't "stunts" or "tricks." I explain that no matter how disorienting, aerobatics is precision flying that includes just a few basic elements—lines, arcs, and rolls—and that each figure follows a specific profile. The analogy with figure skating resonates with many passengers.

Without dwelling on the point, I

# hest es

## Giving intro aerobatic rides

BY BRUCE WILLIAMS  
[WWW.BRUCEAIR.COM](http://WWW.BRUCEAIR.COM)



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also try to reassure passengers about motion sickness. I long ago gave up trying to predict how well any individual will handle aerobatics. I've found no obvious correlation between age, previous flying experience, or gender and tolerance for the sensations of aerobatic flight. Some people enjoy rolling maneuvers but dislike looping figures that impose *g*. Often women do better than men, and pilots may fare worse than those who have only ridden on airliners.

I also briefly describe the basic process for the flight—start-up, communications with ATC, taxi, run-up, takeoff, and flight to practice area, which I show on a chart. It's all part of a process that orients and reassures the passenger.

The preflight interview complements the helpful hints and answers to common questions that I have posted

on my website. I refer all customers to that page when they express interest in a ride. It saves awkward moments should passengers show up wearing stilettos or cowboy boots, as if they were hopping a flight to Las Vegas. My website also includes links to videos that show typical maneuvers.

I conclude this part of the discussion by emphasizing the most important rule: The goal is to have fun! If at any time we're not having fun, we'll come back, no questions asked.

### **Preflight Briefing at the Airplane**

After a stop at the restrooms and another cup of water, we head to the airplane for a cockpit and safety briefing. I complete the formal preflight inspection and servicing before the customers arrive, but I walk passen-

gers around the airplane to explain some of the unusual features (sight gauges and spades often draw the most attention) and to answer questions about aerobatic aircraft.

At the airplane, I also describe the basic sequence of planned maneuvers: rolls, loops, barrel rolls, Cuban-eights, hammerheads, and the like. I demonstrate where to look during each figure. Passengers don't remember the details from this briefing, but it sets the stage for the running commentary later on. It's like the walk-through rehearsals on the ramp that competition and air show pilots perform before they take off. Most importantly, describing the maneuvers reinforces the message that aerobatics are planned actions that follow specific profiles, not ad-hoc experiments in how radically you can make an airplane fly.

Before we don parachutes and climb in, I emphasize several key rules—for safety; to give the customer a sense of control; and to demonstrate that what follows is a practiced routine. These rules include:

You are in charge. If, for any reason, you're not having fun—you don't feel well, don't like the way I fly, don't like the way the airplane feels—we come back.

Empty your pockets—make sure you're not carrying a cellphone, camera, or keys.

Communications procedures using the intercom and nonverbal signals (such as wiggling the stick).

Don't touch the canopy!

The location of flight controls, brakes (!), and instruments, and positive transfer of controls.

I also closely supervise the strapping, making sure that passengers understand how to release the harness quickly—and how not to. Many people are surprised and confused by a typical aerobatic harness. And even when they say they're snugly in the seat, I find that they often need another click or two on the ratchet.

### **First Flight Guidelines**

Acclimating to negative *g* takes time, and I don't push things, especially on a first ride. Remember how



long it took you to develop a tolerance for *g*—especially negative *g*—and how it feels when you haven't flown aerobatics for even just a week or two? Avoid hard negative-*g* maneuvers. No outside loops, outside snaps, and aggressive entries into tumbles (if you do tumbles at all on a first flight).

Talk your passengers through the maneuvers. Tell them what to expect and remind them where to look during each maneuver. Alert them to the onset of *g*. The running commentary reassures passengers that you're in control and following a plan. And it gives you frequent opportunities to check in to see how they're doing.

As I stressed in the introduction, remember that you're not flying for points from judges on the ground. Don't emphasize contest-quality figures with crisp corners. Fly rolls on gentle arcs. Make smooth pulls to and from the vertical. And break up the maneuvers. Let the passenger fly the airplane through clearing turns. I often encourage even nonpilots to try

aileron rolls and loops.

Even if passengers have seen Sean D. Tucker or Patty Wagstaff fly, they'll be thrilled with the maneuvers in the sequence I describe below. A half-Cuban with 1.5 rolls on the downline will seem like a snapping, tumbling slalom to air show center. In other words, tailor the ride to what *they* want to experience, not what you want to show off. I rarely demonstrate snaps and tumbles on first flights. No matter how carefully you explain snaps and tumbles, the experience startles first-timers.

Finally, stop while you're ahead. In my experience, 10-15 minutes of aerobatics is plenty for a first-time flier, whether a pilot or not. "Just one more maneuver" may push your passengers over the edge, so leave them wanting an encore.

### A Proven Sequence

Here's a sequence that has worked well for my first-time fliers:

Easy aileron rolls. If you're flying a high-performance airplane, one-half to two-thirds deflection of the ailerons

works great initially. You can demonstrate maximum-performance rolls later in the ride.

Loops with smooth 3.5- to 4-*g* pulls work great. Don't add rolls. Point out landmarks as you ride over the top.

Barrel rolls, although not contest maneuvers, are good introductions. Remind your passenger that a barrel roll combines the basic elements of the roll and the loop. Perform a big, lazy roll that gives the passenger plenty of time to see the landmarks you call out during the maneuver.

Half-Cuban-eights (not the full figure) also emphasize the point that aerobatics is mostly lines, arcs, and rolls. Start with just one-half roll to upright. If your passenger is having fun, later you can do one-and-one-half rolls on the descending line and fly a complete eight.

Hammerheads. Most people really enjoy hammerheads. But start without rolls on the up- and downlines. Don't worry about drawing the maximum vertical line. Make the pull smooth.

Point rolls (4- and 8-point) dem-

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*...I had to dead stick my Pitts in and an old timer said "Nice save. Someone taught you well." Yes they did! Thanks, Budd.* -Craig H.

*My insurance company covered me, a low-time, low-tailwheel-time pilot in a single-hole Pitts largely because I went to Budd for my training.* -Tom P

*... the engine failed at low altitude and the accident investigators said that my fundamentals saved me. Thanks my friend.* -Maynard H.

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flight debrief. This is a good opportunity to make sure that they enjoyed the ride and are up for the drive home.

## Video

I shoot video during all my flights with GoPro and ContourHD cameras. I have a patch cable that feeds intercom audio to the GoPro, which I typically wear mounted on a head strap that is secured beneath my headset helmet. This arrangement gives the pilot's eye view. The other camera is mounted in the front cockpit to show the passenger's face. I use Adobe Premiere Elements to edit video and capture still images for my website and YouTube channel.

Immediately after the flight, I check the video on a laptop. Customers enjoy seeing video from the hero-cam in the front cockpit, and the quick review gives them another chance to ask questions and share the experience with friends and family who accompanied them to the airport.

I ask my customers to bring a laptop so that I can copy the video files from both cameras for them to take home. That saves burning and sending DVDs later. A typical 45-minute flight generates about 8 GB of data, so a large-capacity thumb drive works well, too.

Many of my passengers post their own videos on YouTube and share them their friends, families, and colleagues. That's not only the best kind of word-of-mouth advertising—it also takes the message about aerobatics to an audience beyond the local IAC chapter. And that's a big part of the fun of giving aerobatic rides. **IAC**

onstrate the precision of aerobatics. Again, set a moderate pace, at least at first. And fly the roll on a gentle arc.

Slow rolls give your passengers a break from rapid-fire changes in attitude, and they offer a taste of negative *g* without overdoing the sensation.

Inverted flight, straight and level, provides another pause from more dynamic maneuvers. Encourage you passengers to look around while flying upside down. But alert them to look straight ahead before you roll upright.

The reverse half-Cuban-eight satisfies the urge to do a split-S (which I typically don't demonstrate, especially to pilots, because it reinforces the wrong way to recover from an overbank/inverted upset).

If your passenger is doing well, a competition-style turn that registers 5–6*g* often makes the point about *g*.

But keep it to 180 degrees of turn the first time.

Pilots sometimes want to see a spin, which I usually demonstrate as an incipient spin from a skidding turn. Just a turn or two is sufficient.

If your passenger is still enthusiastic at this point, you can add a few more maneuvers to the mix:

- Fast aileron rolls, including stringing two rolls together.
- Hammerheads with rolls on the upline and downlines.
- Pull-push humpty for those who want to experience negative *g*.

## Post-Flight

What you do after the flight is as important as the flight itself. After helping the passenger out of the cockpit and the parachute, head into the FBO for a cup of water and a post-



Bruce Williams is a flight instructor in Seattle, Washington. He specializes in stall/spin/upset training and instructing in technically

advanced aircraft. He is the author of two books about the use of PC-based simulation to complement flight training. For more information, visit his website, [www.BruceAir.com](http://www.BruceAir.com).



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# How an Airplane **Will Find You** *When You Really Need One*

**A story of love and fate**

BY DOUG JENKINS

**I** thought long and hard before I decided to write this article. You see, I have a longstanding aversion to seeing my name in print, tooting my own horn, etc. It just seems a tad egotistical to assume that someone

would want to read anything I have to say. However, since I do enjoy reading magazines and gaining insight and information from them, I was faced with a logical disconnect . . . if everybody felt the same way and nobody wrote articles, how would there be magazines to enjoy and learn from?

Given this conundrum, I decided that I would, indeed, write a short piece . . . on two conditions. First it was not going to be about me; it was going to be about an airplane, an idea, and an awesome wife and family. Second, if, after I finished it, I decided it was no good, I would just delete it. Well, here it is . . .



I need to get some stuff about me out of the way up-front so that the rest of this story will make sense. Sorry. I am a recently retired Air Force pilot. During my career I flew (this is not bragging, just scene-setting) the C-21A (a Lear 35), the T-38 Talon, the T-6A Texan II, the MC-12W (a King Air 350 ER), and the F-15C Eagle. Even before I joined the USAF I paid my way through college teaching aerobatics in a Bellanca Decathlon. The common theme here is that I like pulling *g*'s and flying upside down. Way back in 1984, I bought a 1946 Taylorcraft BC-12D, which I still own and love. Unfortunately, *she* does not enjoy pulling *g*'s and flying upside down. As retirement from the USAF inched closer this difference between me and my Taylorcraft, needless to say, presented a problem (but I just said it...oh well...this is why I don't write for a living).

To summarize, the problem was this:

- When I left the Air Force I would no longer have the very generous American taxpayers financing my flying (thank you!).

- My one and only airplane, which is great for the sheer fun of being off the ground, was incapable of scratching a very serious aerobatic itch that the Air Force had scratched for years.

- If I stayed in the Air Force it was likely going to send me somewhere I didn't want to go...like back to Afghanistan, which finally brings us to the start of our story.

Does that make everything up to this point a prologue? Can a magazine article have a prologue?

How does every great flying story start? So, there I was (wait, this wasn't going to be about me!) on a dark and stormy night in Afghanistan. Here's where it gets different: I wasn't flying; I was sitting "ops sup." Ops sup is the term for the poor soul who sits at a desk for three days and watches everyone else go fly until it's finally someone else's turn to be the ops sup. Theoretically, the ops sup fills a very important, even indispensable, role. In reality, I was just answering phones and making sure all the missions were moving on track. Twelve hours of

sheer boredom, noon to midnight, for three days.

If any Air Force communications people are reading the rest of this article, please avert your eyes and plug your ears at this point. Not that plugging your ears would do any good, I guess, so just go ahead and avert your eyes. As we have already established (I think), I was bored. In my boredom, I visited a website, whose name might rhyme with Barnstormers.com.

You see, I had always planned on buying an aerobatic mount when I had enough money and retirement was imminent...so it seemed like a prudent use of my time to see what the market was charging for a decent airplane. I had mentally budgeted around \$50-\$75K for a capable steed. Those figures were well outside the realm of my current means, so I considered this an idle research project to pass the time. (Let me stress this point...I had no intention of buying another airplane any time soon. I intended to finish my time in Afghanistan and go back to flying as an instructor in the T-6 at Randolph Air Force Base in San Antonio for as long as I could.) Sure enough I scrolled through Decathlons for \$50K, Pitts S-2s for more than that, and some truly exotic airplanes I'd never even heard of that cost way more than any house I'd ever owned. It was shaping up to be a long and boring night. That's when, like a bolt from the blue, I saw it . . .

**Fate Point No. 1.** It was love at first sight. It spoke to me across the miles and through the ether. It said quite clearly (and I quote), "You need me. I need you. I have much to teach you, and we will have many, many unbelievably fun experiences growing and learning together." I almost fell out of my chair.

I had never felt this way about an airplane (or any thing, for that matter) before. When I first found the Taylorcraft in 1984 it was similar, but the black and white picture in *Aero-Trader* (a picture I still have) lacked the impact that this airplane had on me. I had never seen so wonderful a col-

lection of parts assembled into sheer perfection. This machine was quite possibly the most beautiful airplane I had ever gazed upon. I needed this airplane . . . and it needed me! I was terrified to keep scrolling down to the price. I just knew that there was no way that the perfect airplane for me was going to be within my reach. Holy cow! Only \$27,000! I can do that! I think . . . maybe . . . possibly . . . I hope.

Much to my surprise there were several single-seat Pitts available under \$30K. I "watch listed" all of them, but none had the same impact, and I kept going back to her picture...not sure how, but knowing that I needed to have it.

**Fate Point No. 2.** Before going to Day 2 of ops sup I was Skyping (is that a word?) with my wife (is that a phrase I can use in a family magazine?). I casually mentioned that I had been looking at airplanes the night before and that I had found a few that were interesting. She seemed intrigued and asked about them. I said, "Let me show you some pictures," and commenced to scroll through the "watch listed" airplanes. When I got to "the" picture, my wife had exactly the same reaction I did! She immediately said, "That's *Daisy*!" and just like that, the airplane had a name.

Her first question, logically, was, "How much does she cost?" I replied, "He's asking \$27,000, so maybe around \$25,000." These were her next words, and they are burned into my brain forever: "That's not so much. We should adopt her." Yes, I realize that I am the luckiest man alive. And, yes, my wife is very much off the market. She is, however, available for airplane purchase consultations with other spouses.

Just like that I became a man on a mission! My job was to make *Daisy* ours.

**Fate Point No. 3.** Now I needed to find out if *Daisy* was even still available. She was! The two co-owners were exceedingly nice and more than willing to work with a potential buyer 7,000 miles away. But there was the real problem...I was 7,000 miles away with no



way to look at the airplane. She was in the Dallas/Fort Worth Metroplex area, and I was in Afghanistan. So my next e-mail was to a trusted IA back home in San Antonio to ask if he knew anyone in North Texas who could look at a Pitts for me. His answer: “No, but I’m going to be up there in two days anyway. Do you want me to look at the airplane?”

You could have knocked me over with a feather. Here is the airplane of my dreams, my wife wants me to buy it, and a mechanic I trust “just happens” to be able to look her over. It was starting to look good for the home team! A flurry of e-mails ensued, and the owners and my mechanic were scheduled to meet . . . two nerve-racking days of hoping no one else wanted *Daisy* as badly as I did. As you can likely deduce by now, the prebuy went fine with my IA telling me that I had found a strong, straight, and well-built airplane and that I should go ahead with the purchase. A quick conversation with the owner (a small miracle of modern technology) and *Daisy* had new parents...or did she?

**Fate Point No. 4.** Into every fairy tale there enters a villain, an evildoer, a dragon, a malevolent presence. In this story that role will be played by a number of lending institutions who did all they could to spoil the happy ending. Bank No. 1’s tactic: We don’t loan on experimental aircraft. Bank No 2’s

excuse: We don’t loan on aircraft under \$30K. Bank No. 3’s gambit: We don’t loan on aerobatic aircraft. Finally, Bank

tent that the towel would never make an appearance in the ring because, well, she just knows things.

She knew, as I am sure you know, that every fairy tale villain ends up being slain by a hero. In this story the role of the hero will be played by my parents. That’s right, my parents. My dad was aware of what was going on and had shared my happiness at the pending adoption of the new plane. As I reached the end of my rope he tied a new one and offered to lend me the money. After wrestling with my pride for about .69 seconds, I gratefully accepted and frantically e-mailed the seller with the news that the money was on the way and please don’t sell *Daisy* to anyone else. He assured me that the airplane would be mine and would be waiting for me when I got back to the States...in four months.

## Into every fairy tale there enters a villain, an evildoer, a dragon, a malevolent presence.

No. 4 took my application and told me all was well; right up until, after four days of processing time, “We don’t loan on aerobatic or experimental aircraft.” What part of Pitts S-1E was unclear to you four days ago? Aargh!

I sent an anguished e-mail to the seller letting him know that he should probably put *Daisy* back on the market, as I had exhausted every financing avenue I could possibly explore from 7,000 miles away. I then sent an even more anguished e-mail to my wife telling her that, despite my best efforts, I had been unable to make *Daisy* ours. She was as disappointed as I was, maybe even more so. She did however insist that I not give up, and she offered one more road to run down before throwing in the towel. In fact, she was quite insis-

**Fate Point No. 5.** Now that I had found an airplane my wife and I loved, determined that it was in good condition, and lined up financing from the other side of the world one final challenge remained . . . finding a home for our new child. My Taylorcraft lives in a hangar that could accommodate the Pitts as well, but just before I left the States the door developed issues that made regular use a bad idea, and repairs were going to take time after I got back to the good old USA.

It was time to turn to a brand new circle of friends to help me find *Daisy* a home. During the purchase process I had joined and subsequently found a lot of useful information on another website, whose name might be something like BiplaneForum.com. Several

members were from the San Antonio area, and all were enthusiastic in the congratulations and quite welcoming to the group. At my request they quickly provided contact information for several local airports and individuals with hangars for rent.

It soon became clear that finding *Daisy* a home was going to be an issue. Airport No. 1: Yearlong wait list. Airport No. 2: You must sign a 12-month lease up-front. Airport No. 3: Nothing available for rent...ever. Finally a new friend from BiplaneForum put me in touch with a guy at an airport that just happened to be nearest to my house, and who just happened to have the only available hangar in San Antonio, and who just happened to be happy with no long-term commitment. Okay then, sign me up! Now that *Daisy* had a home waiting for her, I just needed to get home myself.

There were some days over those last months in Afghanistan when I would get this silly grin on my face and think to myself, "I own a Pitts...no really...I own a Pitts." I'm pretty sure the people around me wondered what was going on since not many folks in Afghanistan have silly grins on their faces. I spent most of those months reading, cover to cover, the IAC *Technical Tips* volumes and the Pitts flight and service manuals, as well as any other information source I could round up. I am a big believer in being prepared.

**Fate Point No. 6.** Finally, we get to the first date. I likened the situation to a "mail-order bride." Sure, she looked great in the pictures, but what would you find when you actually met for the first time? I'm getting ahead of myself, though, because before I could meet *Daisy* in person, I needed to make sure I could get a Pitts off and back on to the ground in one piece. The nice people at the insurance agency were rather insistent on this point. So I found a Pitts S-2B and a super qualified instructor in the San Antonio area and set up an appointment just two days after getting home. I was curious to see if all the "horror stories" were true. As any Pitts pilot can tell

you...they're not. I found the S-2B to be well-mannered and honest...and a real blast. But, I wondered, what about *Daisy*? Would she be okay, too?

My wife and I drove north up I-35 from San Antonio to Midlothian, just south of Dallas, three days after I got home from Afghanistan to collect our new family member. I was giddy as a schoolgirl the whole trip up, and my wife was happy, too. She knew that *Daisy* was the key to my happiness and sanity (and, therefore, her happiness and sanity) once I left the Air Force. She is quick to tell people that she can always tell when I haven't been off the ground in awhile. Apparently, and this is according to her, so consider the source . . . I get a little grumpy!

When the hangar doors opened and we finally met *Daisy* face-to-face, we both knew instantly that we had done the right thing! *Daisy* looked every bit as good as her pictures. After a thorough briefing from the soon-to-be-former owner, it was time to fly her back south to San Antonio while my faithful and indulgent spouse drove home solo.

The very first time I settled into *Daisy's* cockpit, I felt comfortable and "home." The first takeoff was a rush, and the awesome climb left me exhilarated. Flying an open-cockpit biplane agreed with me from the word go. We enjoyed a wonderful trip home and an uneventful landing back at the new home 'drome.

Just as when I first met my wife, it was as if *Daisy* and I had always known each other. I have yet to feel uncomfortable in *Daisy's* one and only seat. She does exactly what I ask and expect her to do. In return, I do not ask her to do anything we are not capable of doing.

She does have much to teach me, and I am just beginning to learn, but owning an airplane that flies exactly like I always wanted an airplane to fly is an unbelievable experience. When I was a kid, dreaming of being a pilot, I knew what I expected flying to be like. Over the 30-plus years I have actually been a pilot I have been searching for that dream experience. Well, now I have it! No machine I have ever flown before is as responsive, powerful, graceful, and as beautiful as this one.

Having this wonderful creature available made the decision to retire from the Air Force, after 22 awesome years, a lot easier, and I was able to find an Air Force simulator instructor job in San Antonio, get hired, and retire before the USAF could do its worst to me (again).

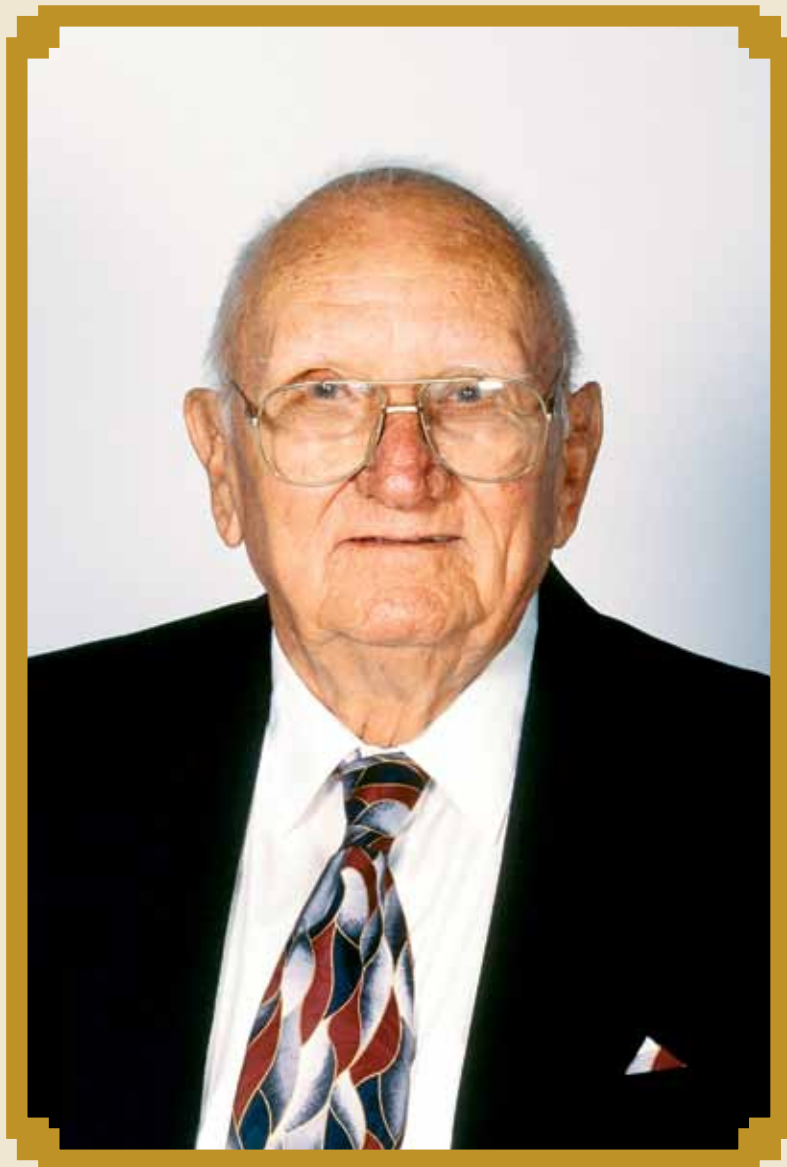
One idle night sitting ops sup in Afghanistan changed the course of my life. I heard *Daisy* call, I answered her call, I shared my dream with my wife, she fell in love too, the stars aligned to assure me that buying a new airplane was the right thing to do, my courageous wife convinced me to persevere when money seemed impossible to find, my parents threw me a lifeline, we found a home for *Daisy*, and when we finally met it was as we had known each other forever.

This brings us to the end of this story, but not *the* story. If there is a moral or a point to these ramblings, it is this . . . listen to your inner voice and allow yourself to feel when fate is steering you in a particular direction.

So many of us are so lost in the noise of day-to-day life that we no longer hear that inner voice of delight and wonder, and we miss fate shouting at us, "Here, right here, is what you need right now!" It would have been easy for me to miss that voice altogether or to use any number of excuses; "I can't really afford this," or "Maybe later," or "Maybe when I have more money," or "No one wants to lend me the money I need, so I should just give up." Truth be told, I can't afford this, I should have waited, later never gets here, and I almost did give up...only a brave and determined wife and a generous set of parents kept me going.

But I am unbelievably happy, at this very moment, just knowing that *Daisy* is out at the hangar patiently awaiting our next adventure, our next practice of the Sportsman sequence. That happiness pales in comparison to the sheer joy that erupts when my left hand moves forward, and we charge down the runway and claw our way skyward, together, learning, growing, doing.

If you haven't already...find your *Daisy* . . . or let her find you. **IAC**



A tribute to

*Curtis Pitts*

by Ben Oliver



I worked for Curtis Pitts twice, first in 1966 when we were based at the Grossman Hammock Airstrip just northwest of Homestead, Florida. In the spring of 1967 I went off crop-dusting (spraying) in Louisiana with I.A. Cash, formerly of Delta Dusters before it became Delta Air Lines. When I returned to Homestead at the end of the season I went to work for Mr. Pitts again. By this time Pitts had moved to the airstrip he had purchased on Mowry Drive in Homestead. In November of '67 I left and went to work in Trinidad, W.I. One of the finest compliments I have ever received was when I returned a couple of years later; Mr. Pitts put a job application on the counter and said, "You just sign it; I'll fill it out."

### A REAL CROP DUSTER

What seems like not so many years ago, crop dusters put out dust, not spray. If you were to have called one of those guys an "aerial applicator" he wouldn't have known what you were talking about. In those days the pilot loaded the dust into the airplane himself, usually with the help of the load man handing the bags of dust to him from the back of a pickup or flatbed truck while he stood on the wing of his aircraft and poured the bags of dust into the hopper. I spent my share of time as a ground man (swamper), and when the bags were delivered and set off onto the ground it made for a lot of extra work to lift them up to the pilot on the wing. I'll never forget those 100-pound bags of fertilizer.

There were more kinds of dust than I can remember including malathion,

parathion, toxaphene, and of course everybody's favorite, sulfur dust. Sulfur dust is highly flammable, and it is extremely irritating to the eyes. We used sulfur dust for quite a variety of things from killing mites to serving as a fungicide. For frost control sulfur dust oxidizes when exposed to air, and it can actually raise the surface temperature of a plant by a degree or two. I think any of us who ever put out more than a couple of loads of sulfur dust have a story or two to tell about it. I once saw a Callair taxi over an empty bag of sulfur dust, and it erupted in flames; the fire burned out immediately, and other than a terrible smell in the cockpit, there was no damage to the airplane. Another time I saw a bag of sulfur fall off a truck and ignite. There were many times my eyes burned so bad I thought I would go blind, and then there was the time I caught on fire while flying a Thrush with a load of sulfur dust on board.

I wonder how many of today's aviators are aware that Curtis Pitts was a crop duster. As was standard procedure in the business back in the '50s and '60s, Mr. Pitts not only flew his Stearman crop dusters but also maintained them. He bought his Stearmans and engines surplus, then he removed the front seat from the stock Stearman and installed a hopper made of plywood and fiberglass. He made some of the earlier hoppers from galvanized or aluminum sheet metal. Like many other operators he also made his own gate assemblies and spreaders. Later, when spraying became more prevalent, he made his spray pumps by adapting water pumps. He also made his spray booms and spray valves. When

he removed the 220-hp Continental that came on the stock Stearman and installed a 450- or 600-hp Pratt & Whitney, he made his own engine mounts and even overhauled his own engines. These airplanes and engines were great workhorses, and the Stearmans operated by Curtis Pitts were among the best.

Mr. Pitts was an orphan raised by his aunt and uncle in Americus, Georgia. He built his first airplane when he was 16. It was a parasol that was totally built by him with a Model T engine. He even made his own propeller. Unfortunately he never got to fly it. While doing taxi tests a gust of wind caught him and flipped it over. Since he hadn't learned to fly yet, he said he wasn't too surprised. He sold the salvage for \$6. Later, he'd laugh and say, "I reckon that's the cheapest airplane sale I'll ever make." Shortly after, he left Americus and worked for the railroad as a carpenter for several years. During this time he pursued his love of aviation and earned his pilot license as he took an aeronautical engineering correspondence course.

During World War II, he worked as a military maintenance inspector in Jacksonville, Florida, at the naval air station, where he built the first Pitts Special S-1 in 1945. Through the '50s, '60s, and '70s the Pitts Specials dominated aerobatics and the air show business. There have been more S-1 Pitts Specials to appear in air shows and aerobatic competitions than any other airplane in the world.

After the war, he moved to Gainesville, Florida, and for a few years he operated an aircraft mechanics school. During his time in Gainesville he got into the crop-dusting business,



and then in the mid-'50s he moved to Homestead, Florida. In Homestead he had plenty of winter work with the produce and groves. During the summer months he took his fleet up near Clarksdale, Mississippi, where he kept busy during the season flying on cotton and soybeans. By this time most of the application work was spraying, but there was still plenty of dusting going on. He called his outfit Pitts Aviation Enterprises Inc. He had a fleet of three 450 Stearmans and one 600 Stearman, which he called *Ol Grumpy*. If any of you boys and girls ever flew a 600 Stearman you'll appreciate the name. Mr. Pitts was one of the very few high-time Stearman

pilots I ever knew that never ground-looped—in fact he never damaged an airplane while doing ag work.

Curtis Pitts has always been and will always be Mr. Pitts to me. I was still a teenager when I met him. I was working for one of his competitors, Jim Holland, but I hung around his place every chance I got, and I bugged him enough that after a year or so he finally gave me a job. He hired me to work on his Stearman dusters, but by the time I served out my two weeks' notice and showed up for work, he had different plans for me. He had decided to get back to his real love of building Pitts Specials, so he put me to work from day one building a set of

wood wings for an S-1A.

What a wonderful gentleman he was to work for. His patience was unending. He would spend however much time it took to explain to me what he wanted and how he wanted it done. I made more than a few mistakes, but he was just great at showing me how to correct them. I can assure you I took up a lot of his time. At that time there were four of us, including Rosy the secretary, Robert the welder, me, and Mr. Pitts, working there in the hangar on Grossman Drive. Together, we were the Pitts Special factory. I've never enjoyed a job as much as the time I spent working there. One of the best things about working

for Mr. Pitts was the respect. It didn't matter to him who you were or where you came from. A pilot, bank president, doctor, or a mechanic's helper; we all got treated the same by him. He was the most straightforward, unpretentious man I've ever known.

I don't remember Mr. Pitts ever complaining about how much time it took for me to do a job. I do remember, clearly, that when the job was finished it better be right; Mr. Pitts settled for nothing less than perfection. I hadn't been working for him for long when he gave me a drawing and told me to build a template for the fuel tank cap assembly. It was about 6 inches outside diameter and 3.5 inches inside diameter. It was to be made out of 1/8-inch mild steel flat stock with eight symmetrical holes in. That seemed simple enough to me.

I made the first one in just a couple of hours. When I finished I realized the holes weren't exactly evenly spaced, and I knew that wouldn't work for Mr. Pitts. So two days and a half-dozen tries later I got it done. It was absolutely perfect. I was embarrassed when I took it to him, as it took me so long to get it right. He looked it over, got out his calipers and measured all the details, and said "good job." End of subject! To Mr. Pitts time and materials, within reason, were not an object just so long as the job was done right.

Mr. Pitts had ordered some cotton

fabric from a new source, and when I had finished building my first set of wings, he helped me stick the fabric. We finished sticking that evening, and he had to leave for an out-of-town trip the next day so he questioned if I knew how to wet the fabric to shrink it and "lay the nap" as I put on the first coat of



dope. I assured him I did.

I thoroughly saturated the fabric with water, gave it the rest of the day to dry, and then I applied the first coat of dope. When the dope dried the fabric was full of wrinkles. About that time Mr. Pitts returned from his trip. I saw a side of Mr. Pitts I had never seen before; that man had a temper. He gave me a pretty severe talking to. He told me of his disappointment and explained the time that would be lost trying to straighten this mess out and that we were already running late on delivery.

By repeatedly building up coats of dope and sanding we were able to pretty well hide the wrinkles, but it made for a lot of extra work and a less

than perfect job, which just proved to be more and more embarrassing to me. I kept my head low and my mouth shut for quite a while after that incident.

A couple of months later I finished my second set of wings, and once again Mr. Pitts and I stuck the fabric. This time he wet the fabric, and the

following day he applied the first coat of dope. When the dope dried the fabric was, again, full of wrinkles. As I said before, Mr. Pitts seldom showed his temper, but when he did it was impressive. He walked into the office and called the people he purchased the fabric from and blasted them. He never cursed them, but he left no doubt in their mind about what he thought of their fabric as well as

them and perhaps some of their relatives. He was talking pretty loud, and I could hear him from all the way out in the shop. I heard him say, "I can't believe the way I talked to one of my men because of your sorry product."

Then he came out into the shop and apologized to me.

The point I want to make here is this; the whole world knows what a successful engineer and aircraft builder Mr. Pitts was. The Pitts Special ranks as one of the finest aerobatic aircraft the world has ever known. Only some of us were ever fortunate to know what a wonderful man Mr. Pitts was.

Curtis Pitts passed on June 10, 2005; he was 89 years old. **IAC**

# TECH TIPS

REPRINTED FROM THE INTERNATIONAL AEROBATICS CLUB  
TECH TIPS MANUAL, VOLUME IV

## Oil Pressure Stabilizer

IAC member Klaus Peter Danielson, Luederstrasse 9, 2840 Diepholz 1, West Germany, has designed and built an oil stabilizer to enhance the operation of Christen inverted oil systems. (See connecting scheme at right and photos.) Klaus' description of his stabilizer is as follows:

"In some aerobatic maneuvers, engines equipped with the Christen oil system show a significant oil pressure drop. These are long vertical lines and zero-G-maneuvers, when the balls of the Christen oil valve become indifferent.

"The stabilizer consists of a 4 liter pressure accumulator with a bladder. This bladder is inflated to 40 PSI. The accumulator is mounted to the alternator mounting flanges of the 10-360 Lycoming crankcase and is connected to the return line from the oil cooler to the engine. When the engine is operating at normal 80 PSI, the accumulator

is filled to one-half with oil, because the engine oil pressure compresses the bladder. When the oil pressure drops below the normal range during aerobatic maneuvers, the bladder depresses and oil is discharged to the engine. At this moment, the engine oil pump is working as a check valve, so that the oil is not lost to the sump.

"This simple system with only one moving part has proven to be highly effective. The oil pressure drop during an Unlimited aerobatic sequence is limited to approximately 40 PSI and not to zero PSI as it is without this system.

"The accumulator housing is built from aluminum alloy by myself; the rubber bladder is a custom-made part, taken from a hydraulic accumulator.

"This system is in service now for one year and 80 engine hours, without any trouble in a Pitts SIS.

"Maintenance and functional tests are very easy. The only thing to control

is the pressure in the bladder. This can be done after every engine shutdown. When the engine stops, the oil pressure drops very slowly until reaching 40 PSI and then drops rapidly to zero as usual.

"With this system, engine wear and the probability of a sudden engine failure are reduced. This improves the safety of aerobatic flying, especially when practicing outside the area of an airfield."

Klaus advised that he had not planned on producing the oil stabilizer units but if he received orders for 10 or 15 units, he might consider a short production run. He also stated that if anyone would be interested in building an oil stabilizer, he would send him a set of blueprints and, if desired, sell him the bladder. IACers may also note that Klaus is presently working on a dry sump system for a Lycoming A10-360 in an Extra 230. Hopefully, a future issue of *Sport Aerobatics* will highlight this dry sump system. **IAC**

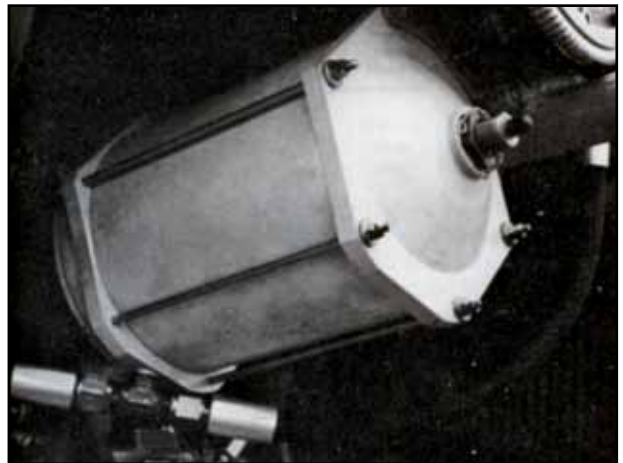


Above: Assembled without outer tube.

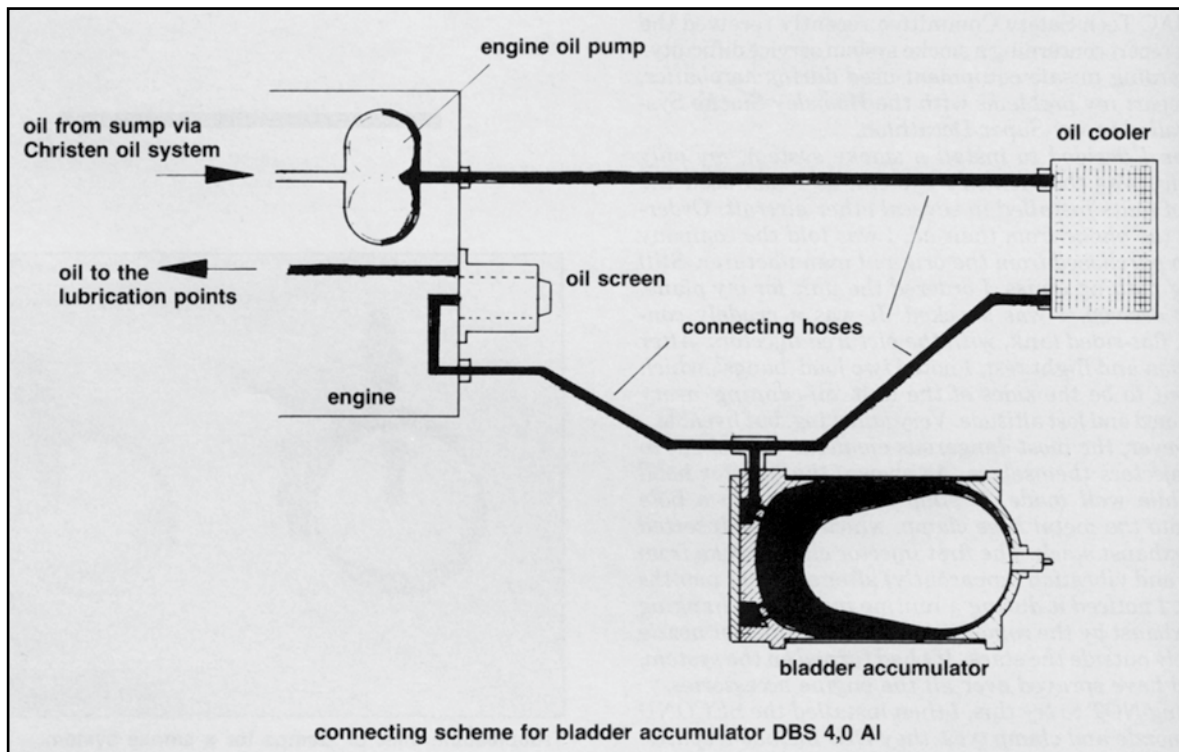
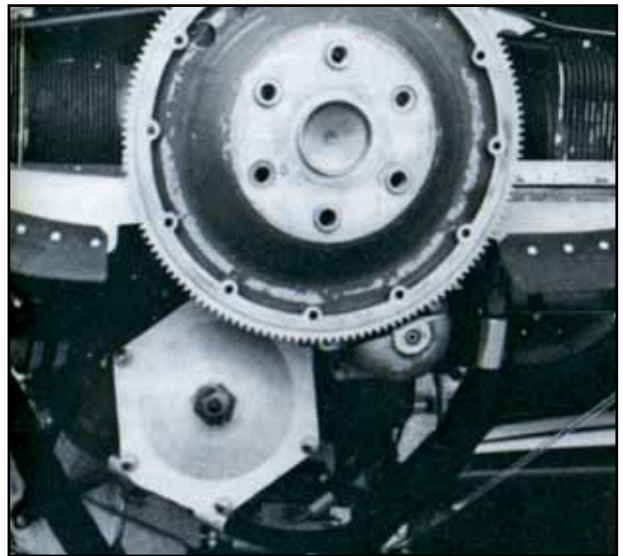
Left: Screen bottom.



All parts unassembled.



Above, below right and left: Three views of installed accumulator.



# How to Perform a Proper Decathlon Prebuy Inspection

## Avoiding common pitfalls

BY GREG KOONTZ



**BUYING A USED AIRCRAFT BRINGS** tough questions. How was it flown? Did it ride fast in rough air? Did it hurry down and shock cool? How many times has it been slammed into the pavement? If you've flown with a lot of pilots (and I know I have), you have a good idea how rough some pilots can treat a poor ol' airplane.

Now consider that the airplane you want to buy is aerobatic. You just popped open a whole new can of worms. In the course of my business

I buy and sell a few aerobatic planes, almost exclusively Decathlons. The type has been around since the Bee Gees. They've been used, cruised, and often abused. Most have been staying alive (couldn't resist that). Finding a good one is tricky business. I've been burned. Sellers often avoid telling all or just don't know it. Here are my thoughts for success.

The second thing that comes to mind (we'll get to the first later) is the engine. The AEIO-320 and -360 series

have an odd and often misunderstood time between overhauls (TBO). Lycoming considers these engines to be most probably submitted to a lot of sudden engine power changes. These cause forces and temperature changes that in turn accelerate the wear on their parts, so Lycoming throws out 1,600 as TBO. But it also says that, because every engine might have had more or less exposure to these circumstances, the operator should make his own determination of TBO with a little interpolation. Wow. So if you find a plane that was never flip-flopped or, say, flip-flopped half the time, you just do the math. I assume you can just compare it to a normal IO-360, which is recommended for a 2,000 hour TBO, and adjust down from there. That leaves you a little investigation to do.

It is my experience that Super De-

cathlons, especially with constant-speed propellers, don't get as much of this throttle jockeying as one might imagine. Most of us fly acro with a "set it and forget it" attitude so our engines just hum along mostly at a 25/25 power setting. Mixture gets set to a conservative place that keeps temps in a small envelope of content. I pay the bills so I never end a flight with a sudden reduction in power followed by a screaming dive at the airport. I usually avoid the big temperature swings this way. It gives me great life out of my rugged little Lycomings. But beware! I rarely see this habit in those who fly these machines, so do a good compression check on your prebuy inspection. It says a lot. Check the oil for metals and the plugs for how the plane has been leaned.

While you expect a 400-hp Pitts S-2 with 10-to-1 pistons to gyrate and hover until the CHTs cry uncle, the ol' Decathlon usually doesn't live that life. So the Pitts could have a questionable engine at mid TBO and a Decathlon probably just needs that hottest cylinder worked on at around 1,400 hours. It depends if it's been flown in Intermediate category by an 18-year-old or off to get a hamburger by a retired accountant, so ask. What you are really looking for are those prop strikes that are so common to this type of planes that have sat for years; you know, the ad that says 900 hours' total, 150 since overhaul. It isn't aerobatic wear; it's a pilot who didn't hold the back pressure in a bounce! It tells a story on how it's been treated. So what I got to say is: Check that engine well. It's the big-ticket item.

Let's move on to the first thing: the wings. So, Greg, they ask, what is your take on wood spars?

"All I can say," I reply, "is I have a 1939 Lipert-Reed clipped-wing Cub with an original wood spar that I love

**I bet you  
are really  
worried  
about how  
hard this  
plane has  
been flown.  
Was the  
redline  
exceeded?**

to fly in Sportsman competitions."

I saw it when it was restored, and I know it. Bottom line: Good wood is good, but how do you know? Until that wing is completely disassembled and that spar is completely inspected, you just don't know what you've got. I believe, at least in my heart, that wood is as strong as metal. But you've got to know what you've got. Metal spars are just easier to come to terms with so they will always be more marketable. If your budget needs you to buy a wood spar Decathlon, you should A) have a wood spar expert inspect it as best he can, and B) for resale sake, get into it at a good price. It is going to bring less later and sell slower (unless you con-

vert to the metal wings). That said, I think there are some great buys out there for that reason.

With the wood versus metal controversy aside and the engine checking out as nice 'n' tight, what more are we looking for? Let's start with some general condition. You want to do some research. Damage history is important because spar cracks most often come from ground loops rather than air loops! Fabric and steel aircraft rust but not like the corrosion of aluminum aircraft. You are more concerned if it sat outside rusting the lower longerons with rainwater than you are with salt corrosion. Investigate both by finding where it lived and how it was stored. The faded and cracked finish will tell a story. Decathlons need the fabric recovered from cosmetics more often than airworthiness, but the fabric condition is good insight to the health of the steel tubing underneath. Remove the back bulkhead, point your flashlight down the empennage, and see just how pretty a sight is in there. Crap yields crap. It should look like well-protected territory. If it looks like a trash bin, sic your best A&P on it before further investment.

I bet you are really worried about how hard this plane has been flown. Was the redline exceeded? Did someone over *g* this thing? How do I know? Well, let's face it, the best way to assure ourselves of those facts is very simple: order a new one and pick that sucker up at the factory! If that luxury isn't in the cards for you, then here is what I do to hedge the bets: First, crawl up under the used plane. I can't believe how many planes I've sold and never saw the buyer crawl up under them! There is a story down there. It talks of lean or rich running engines, loose rings, and oil leaks. If the belly is oil-soaked and uncleanable, it tells about owners who don't love it and fly



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wings will do that even at modest g's and can't be helped.

If a few fabric reinforcement tapes are peeling up a little, don't fret; the stretching of normal acro does that, and you are just going to have to glue them back down. Get used to it. It stops after a while. In fact, if there is no peeling or no repairs, you probably are buying that airplane owned by the accountant, and it is going to start peeling after you start some acro on the airframe. I'd rather know the last guy already went through that. Finally, wash it yourself if you can. It is amazing how many little things you find when you wipe off every square inch.

Here are the negatives. If the top of the upper nose cowl has a weird scrape from the starter ring, then the plane has been pushed hard or has bad engine lord mounts, or both. Look at the mounts. Look at the back of the wing. If there are blue stains under the inner trailing edges or inside the trailing

edges of the wings, you have a cracked fuel tank; very serious bucks. Call the factory for a quote. If the wing's inner trailing edges are warped up, this plane has done serious tail slides (probably on purpose). It will fly okay, but this is no easy fix. Those three inner wing ribs are short due to the fuel tanks and are not complete trusses like the rest of the ribs. They can't take the stress of catching air in a tail slide and bend. Call the factory. Same goes for the trailing edge of the elevators but more so. Also check the stitching on the stabilizer inner cross members. If the stitches or rivets are pulled off the underlying braces, there has been some wicked attempts at hard knife-edge flight. It is not a bad fix, but budget the work. Call the factory. Why? Because it is the best of the best when it comes to a Decathlon repair station. ([www.amerchampionaircraft.com](http://www.amerchampionaircraft.com)).

Most important, take a good look at the seller, too. If he has wild eyes, hair that stands straight up, and a funny facial twitch, maybe you need to look a little deeper (just kidding!). But seriously, know whom you are buying from. This is where you are going to learn to appreciate the term "one owner." I've bought planes that have had eight owners and had been all over the country. That can become a real crapshoot. Knowing the places and people who have flown and maintained your next investment is important. Does the seller seem like a person who is serious about maintenance? Is the plane sitting in a pristine hangar or out on the tie-down line? Is there an atmosphere of a tight budget or the signs of a "spare no expense" program? What kind of situation are you inheriting? Spend the time to find out. Once it's yours, it's yours.

If any of this sounds scary, you might be right. No one can guarantee success, but an experienced helper can be a good value. A few bucks spent on the right help is cheap insurance. Doing most of your investigation before traveling might save a lot of money. Knowing when to walk away saves even more.

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it hard and put it up wet. If the fabric is torn and shabby, it talks of very high speeds (these bellies really flutter at high speeds). If it is super clean, then fly it a good while and look again. Clean shows how good it can be dressed up, but not how it's been flown.

Take a slow and discriminating walk around the plane. If the screws along the back left and right sides of the windshield have cracked paint around them, don't panic. The flex of the





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## Open up and become a better pilot

**IN DECEMBER I ATTENDED THE ANNUAL ICAS** (International Council of Air Show) convention in Las Vegas. This is where the vast majority of the air show performers from across the United States, Canada, and a few other countries gather to showcase themselves and their acts to prospective air show committees for the upcoming 2013 air show season. This is also a time for pilots to attend numerous seminars.

Our opening guest speaker was four-time Super Bowl champion and football hall of fame player Rocky Bleier. For those not old enough to remember or know his name, he played for the Pittsburgh Steelers in the 1970s. His message to the attendees was simple and to the point: keep focused and never give up. His story touches on the serious war injuries he sustained in Vietnam that threatened his career and how he overcame them through hard work, determination, and the support of his teammates. Rocky was not afraid to ask for help. You too may not realize it, but you have many resources out there that can help you become the best pilot you can be, and all you have to do is ask. Don't hesitate to ask your flying mentors for help. Ask me for parachute help, but ask someone, if you need help. One of the best quotes I heard at the convention was words to live by: "Safety is a byproduct of professionalism." What a powerful statement. Be professional and ask for help.

Several seminars addressed issues of safety and encouraged input and suggestions, from those listening, on how to make flying better and safer. There was also a closed-door session and discussion amongst the pilots about the previous year's incidents and accidents. These meetings are a gathering of minds and are all about sharing ideas and trying to make flying as safe as it can be. Not just for air show pilots, but for all pilots. Particularly those of you who fly in unusual attitudes.

Here's what I'm asking of you. Don't shut your mind off to new ideas and suggestions. Why am I bringing this up? After all I just pack parachutes; what does that have to do with your flying? You need to know your aircraft intimately. You need to know your ability, and you need to know when to say no, like my last column talked about. You need to do what's necessary to prevent an accident. I'm not

just talking about you. If you observe unsafe practices of others, you need to speak up. Bailing out of your aircraft is your final attempt at survival. You need to try to prevent backing yourself into a corner where you're running out of time and altitude because you didn't know when to say no.

The theme of all the seminars was of course safety-related. They had many things in common. One challenged you to make "disciplined decisions." One talked about *complacency* and not practicing your routine and emergency procedures over and over until they become second nature and you could do them in your sleep. Another discussed *poor planning and briefings*, in other words preparation. Remember, good flights don't

just happen. Every flight deserves good planning, a preflight briefing, and a debriefing. *Distractions* that take you and your mind away from your upcoming flight were discussed. You

need about an hour to prepare your mind for the task at hand. *You also need to have a plan to abort your routine* before it goes horribly wrong and you cannot bail out. Remember, you can abort a maneuver and fix what is wrong and do it better the next time. Just make sure you leave enough room for a next time.

Remaining disciplined and focused is critical when flying, especially when you're flying in close proximity to the ground. I don't want anyone to think that all they have to do is bail out to fix a problem. I believe most problems associated with flight can be fixed with careful planning before the wheels ever leave the ground.

One issue that was a factor in several accidents was DA (density altitude). You need to understand this very clearly. Running out of altitude leaves no room for bailing out. The DA in your early morning flight may not require you to increase your entry altitude at all. But, don't assume that your afternoon flight will be the same. It's now 20 degrees warmer. You need to do the simple math and adjust your routine accordingly for DA before you take off. Every flight is different. When flying at your home field you should practice at a DA as close to where you will be flying your next contest or air show. This may require you to practice hundreds or even thousands of feet above the normal altitude you practice at. It's critical you understand that your turn rate and turn radius will change dramatically at a high DA.

**. . . you have many resources out there that can help you become the best pilot you can be, and all you have to do is ask.**

Practice aborting your routine at various times, during your routine. You can always re-enter later, but you need to be around later to do so. Just like your flying routine, my bailout seminars have a similar message: practice, practice, and more practice until your routine becomes second nature. Don't back yourself into a corner where escape is impossible. *Your flying should not be done on a wing and a prayer.* Leave that for the movies.

Recently one of my customers sent me an e-mail regarding bailing out. I had seen it before, but it's worth sharing with you. If you run out of options and have to bail out, you already know it's a bad day. When you're falling and you pull your rip cord you shouldn't have to wonder about the fact you had your parachute packed by the lowest bidder. Choose your parachute rigger wisely.

As the weather starts to turn warmer and the snow is almost gone, now may be the time to return your parachute to the manufacturer for a comprehensive check and to make sure it's being serviced properly and all upgrades (if any) have been accomplished. It also allows the manufacturer to check the workmanship of your local parachute rigger.

Have a safe flying season, and please do not hesitate to e-mail ([allen@silverparachutes.com](mailto:allen@silverparachutes.com)) or call me with your questions. I always enjoy hearing from you. Remember, I'm available to give safety seminars at your next meeting or contest and would like to meet you in person.

May you always have blue skies.

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# Staying in Bounds

## Seeing the invisible

by Charlie Harrison  
Unlimited Chief Judge, 2012 U.S. Nationals

**T**here was some concern during the 2012 Nationals about boundary judging. One Unlimited pilot was quite upset about having received eight outs on one flight. As chief judge for the category, I was also concerned, but the boundary judge's work sheet tallied with the information recorded by radio reports recorded at the chief judge's station.

Boundary judges are responsible for determining whether an aircraft has crossed the invisible plane that exists beyond the edge of the aerobatic box. In this article, a plane is a real or imaginary surface (think of a gigantic flat piece of glass), whereas an aircraft is a flying machine. Figure 4.11.1, in the IAC rule book, depicts the box as being 1,000 meters by 1,000 meters in plan-view and of heights that vary by the category that is currently flying. The boundary planes are 50 meters beyond each edge of the box, providing an arbitrary buffer that allows the pilot to fly beyond the edge of the box prior to incurring a penalty for boundary infringement.

One of the jobs of the contest

committee is to provide a method for the boundary judge to make that determination. This is referred to as a "sighting device" and usually consists of a pair of strings aligned with the boundary that is to be "guarded."

Pilots are judged by their deviation from perfection as determined by a panel of three to 10 grading judges, a perfect score being 10 with point deductions for imperfections. It is very similar to the system used in figure skating or diving. Scores are further adjusted by a computer program that attempts to minimize individual judge's biases. The boundary judge, however, is usually a single person with a sighting device, provided by the contest committee, which usually consists of two pairs of strings aligned with the planes of adjacent boundaries. Two judges commonly guard four boundaries. Their observation reports are essentially final and without recourse.

The contest committee has a responsibility to provide

the most accurate sighting device possible. One could rationalize errors by saying they are the same for all pilots, so there is no harm done, but I believe the contest has a responsibility to assure error-free results. Boundary judging is subject to three types of errors. Observational errors are those associated with what the boundary judge believes he sees when using the sighting device. Equipment errors are those that are inherent in the design of the device he is



using. Installation errors are those caused by deviations from the true vertical and alignment with the 50 meter buffer zones.

Installation errors can be minimized by using a professional to survey the 1,000 meter box and 50 meter buffer zones. Absent that, the committee has to do the best job possible, using the talent and equipment available. It is common practice for surveyors to drive iron pipes into the ground to mark boundaries. The location of box center, corner markers, and T-markers that the pilot sees also should be surveyed. There should also be markers provided, on the sighting line to the adjacent corners. These markers should be about 20 meters from the corner and provide a reference for installing the sighting strings.

Equipment errors can be minimized by utilizing a device that establishes a true vertical at the 50 meter displaced corner. The importance of this effort is realized by noting that a quarter inch error from the vertical at 7 feet, where the sighting strings are usually tied, translates to 107 feet at a distance of 3,000 feet; or more than two wingspans. The simplest indicator of the vertical is a common string-and-weight plumb bob. In our application it must be protected from ambient wind. I have designed and built an enclosed plumb bob with a parallel reference string, displaced exactly 24 inches from it. The device would be installed with the lower end of the reference string precisely over the surveyed corner and the tilt of the box controlled by adjustable diagonal braces so that the plumb bob hangs exactly over crossed pencil lines in the bottom of the box. Screw eyes are installed at 5 feet and 7 feet above the ground, aligned with the parallel

reference string, to which the sighting strings are attached. A sighting string, tied to the lower screw eye, is strung taut to a 12-inch spike (iron nail) driven into the ground at 10 meters along the surveyed line to the adjacent corner. A second string is tied to the upper screw eye and a spike at 14 meters along the surveyed line to the adjacent corner. The strings will be approximately parallel, which makes them easier to use when aircraft are almost directly overhead the observer. After installation, the reference string is tied aside, and the observer would sit with his/her head where the reference string was, which corresponds to the place where the two sighting strings appear to be exactly superimposed, and thus aligned with the boundary plane. It is common for sighting strings to be installed, aligned with both adjacent corners, so that the judge can monitor two boundaries at once.

Pilots are judged by their deviation from flying perfect figures, as determined by a panel of three to 10 grading judges. The raw scores are further adjusted by a computer program that attempts to minimize individual judges' biases. The boundary judge, however, is traditionally a single person, often inexperienced at being in that chair, observing two boundary planes that form a corner. Honesty is assumed, as a matter of course, and his/her determinations are essentially final and without recourse. Important contests, such as Nationals, might use four boundary judges, one on each corner, sighting opposite directions along the boundary, and requiring two to "make the same call." This was done at Lakeland WAC with considerable success. There was not one protest filed against the boundary judging.

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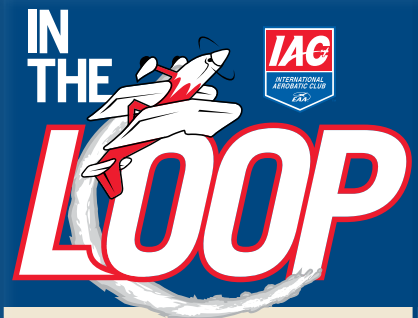
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## CONTEST CALENDAR

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

### **Borrego Hammerhead Roundup** (Southwest)

Thursday, April 11 – Sunday, April 14, 2013  
Practice/Registration: Thursday, April 11  
Rain/Weather: Sunday, April 14  
Power: Primary through Unlimited  
Location: Borrego Valley Airport (Lo8), Borrego Springs, CA  
Region: Southwest  
Contest Director: Gray Brandt  
Contact Information: Primary Phone 970-948-0816  
E-Mail: [graybrandt@yahoo.com](mailto:graybrandt@yahoo.com)  
Website: [www.iac36.org](http://www.iac36.org)

### **Ben Lowell Competition** (Mid-America)

Friday, April 19 – Sunday, April 21, 2013  
Glider Categories: Sportsman through Unlimited  
Power: Primary through Unlimited  
Location: USAF Academy Airfield (KAFF), USAF Academy, CO  
Region: Mid-America  
Contest Director: Jeffery W Riddlebarger  
Contact Information Primary Phone: 719-499-4501  
Alternate Phone: 719-282-9550  
E-Mail: [F15Cheese@gmail.com](mailto:F15Cheese@gmail.com) or [jeffery.riddlebarger@us.af.mil](mailto:jeffery.riddlebarger@us.af.mil)

### **The Early Bird** (South Central)

Friday, April 26 – Saturday, April 27, 2013  
Practice/Registration: Thursday, April 25  
Rain/Weather: Sunday, April 28  
Power: Primary through Unlimited  
Location: Brenham Airport (11R): Brenham, Texas  
Region: South Central  
Contest Director: Gary Walker  
Contact Information Primary Phone: 832-656-8314  
Alternate Phone: 832-656-8314  
E-Mail: [gawwalker@aol.com](mailto:gawwalker@aol.com)

### **Great Plains Collegiate Challenge** (South Central)

Saturday, April 27 – Sunday, April 28, 2013  
Practice/Registration: Saturday, April 27  
Power Categories: Primary Sportsman  
Location: McPherson (KMPR): McPherson Kansas  
Region: South Central  
Contest Director: David Moll  
Contact Information Primary Phone: 402-613-5422  
E-Mail: [davidmoll66@gmail.com](mailto:davidmoll66@gmail.com)  
Website: [iac80.org](http://iac80.org)

### **Sebring Aerobic Championships** (Southeast)

Thursday, May 2 – Saturday, May 4, 2013  
Practice/Registration: Saturday, April 27 – Friday, May 3  
Power: Primary through Unlimited  
Location: Sebring (SEF), Sebring, FL  
Region: Southeast  
Contest Director: Mike Mays  
Contact Information Primary Phone: 561-313-8503  
Alternate Phone: 561-734-1955  
E-Mail: [soaerobatics@aol.com](mailto:soaerobatics@aol.com)  
Website: [www.iac23.com](http://www.iac23.com)

### **Los Angeles Gold Cup – Duel in the Desert** (Southwest)

Friday, May 3 – Saturday, May 4, 2013  
Practice/Registration: Thursday, May 2  
Rain/Weather: Sunday, May 5  
Power: Primary through Unlimited  
Location: Apple Valley (APV), Apple Valley, CA  
Region: Southwest  
Contest Director: Chris Olmsted  
Contact Information Primary Phone: 831-334-7232  
E-Mail: [chris@olmstedaviation.com](mailto:chris@olmstedaviation.com)

### **Carolina Boogie** (Northeast)

Friday, May 3 – Sunday, May 5, 2013  
Practice/Registration: Thursday, May 2  
Rain/Weather: Sunday, May 5  
Power: Primary through Unlimited  
Location: Wilson Industrial Airport (W03), Wilson, NC  
Region: Northeast  
Contest Director: Eric Sandifer  
Contact Information Primary Phone: 919-605-9585  
E-Mail: [mioomp@yahoo.com](mailto:mioomp@yahoo.com)  
Website: [iac19.org](http://iac19.org)

### **Armed Forces Memorial Aerobic Contest (AFMAC)** (Southeast)

Friday, May 31 – Saturday, June 1, 2013  
Practice/Registration: Thursday, May 30 – Friday, May 31  
Rain/Weather: Sunday, June 2  
Glider Categories: Sportsman through Unlimited  
Power: Primary through Unlimited  
Location: Grenada Municipal Airport (GNF), Grenada, MS  
Region: Southeast  
Contest Director: Chris Rudd  
Contact Information Primary Phone: 850-766-3756  
E-Mail: [invertedribboncut@gmail.com](mailto:invertedribboncut@gmail.com)  
Website: [www.iac27.org](http://www.iac27.org)

### **Wildwoods AcroBlast** (Northeast)


Thursday, June 13 – Sunday, June 16, 2013  
Practice/Registration: Thursday, June 13 – Friday, June 14  
Power: Primary through Unlimited  
Location: Cape May County Airport (WWD), Cape May, NJ  
Region: Northeast  
Contest Director: Craig B. Wisman  
Contact Information Primary Phone: 717-756-6781  
E-Mail: [cwisman@comcast.net](mailto:cwisman@comcast.net)  
Website: [www.iac58.org](http://www.iac58.org)

### **Ohio Open** (Mid-America)

Friday, June 14 – Saturday, June 15, 2013  
Practice/Registration: Thursday, June 13  
Rain/Weather: Sunday, June 16  
Power: Primary through Unlimited  
Location: Union County Airport, Marysville Ohio (KMRT), Marysville, Ohio  
Region: Mid-America  
Contest Director: Sheri Davis  
Contact Information Primary Phone: 614-448-7392  
Alternate Phone 614-890-971  
E-Mail: [sdavis\\_1985@yahoo.com](mailto:sdavis_1985@yahoo.com)  
Website: [iac34.com](http://iac34.com)

### **U.S./Canada Aerobic Challenge** (Northeast)

Saturday, June 22 – Sunday, June 23, 2013  
Practice/Registration: Thursday, June 20 – Friday, June 21  
Power: Primary through Unlimited  
Location: Olean Municipal Airport (KOLE), Olean, New York  
Region: Northeast  
Contest Director: Patrick Barrett  
Contact Information Primary Phone: 716-361-7888  
E-Mail: [cbpbmb@aol.com](mailto:cbpbmb@aol.com)  
Website: [IAC126.blogspot.com](http://IAC126.blogspot.com)



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**Apple Cup (Northwest)**

Friday, June 21 – Saturday, June 22, 2013  
Practice/Registration: Thursday, June 20  
Rain/Weather: Sunday, June 23  
Gliders Categories: Sportsman Unlimited  
Power: Primary through Unlimited  
Location: Ephrata Municipal Airport (KEPH): Ephrata, WA  
Region: Northwest  
Contest Director: Will Allen and Jerry Riedinger  
Contact Information Primary Phone: 425-985-9469  
Alternate Phone: 425-653-1307  
E-Mail: [JRiedinger@perkinscoie.com](mailto:JRiedinger@perkinscoie.com)  
Website: [www.applecup.org](http://www.applecup.org)

**Lone Star Regional Aerobatic Contest (South Central)**

Friday, June 21 – Sunday, June 23, 2013  
Practice/Registration: Saturday, June 15 – Friday, June 21  
Rain/Weather: Sunday, June 23  
Power: Primary through Unlimited  
Location: North Texas Regional (GYI): Sherman Texas  
Region: South Central  
Contest Director: Mike Gallaway  
Contact Information Primary Phone: 214-673-9935  
E-Mail: [mike.gallaway@tx.rr.com](mailto:mike.gallaway@tx.rr.com)  
Website: [iac24.org](http://iac24.org)

**Bear Creek Bash (Southeast)**

Friday, June 28 – Saturday, June 29, 2013  
Practice/Registration: Thursday, June 27  
Rain/Weather: Sunday, June 30  
Power: Primary through Unlimited  
Location: Clayton County Airport – Tara Field (4A7): Hampton Georgia  
Region: Southeast  
Contest Director: Chris Rudd  
Contact Information Primary Phone: 850 766 3756  
Alternate Phone: 850 766 3756  
E-Mail: [invertedribboncut@gmail.com](mailto:invertedribboncut@gmail.com)

**Midwest Aerobatic Championship (Mid-America)**

Friday, June 28 – Sunday, June 30, 2013  
Practice/Registration: Friday, June 28  
Power: Primary through Unlimited  
Location: Seward (SWT): Seward, Nebraska  
Region: Mid-America  
Contest Director: David Moll  
Contact Information Primary Phone: 402-613-5422  
E-Mail: [davidmoll66@gmail.com](mailto:davidmoll66@gmail.com)  
Website: [IAC80.org](http://IAC80.org)

**Green Mountain Aerobatic Contest (Northeast)**

Friday, July 12 – Sunday, July 14, 2013  
Practice/Registration: Thursday, July 11 – Friday, July 12  
Glider Categories: Sportsman through Unlimited  
Power: Primary through Unlimited  
Location: Hartness State Airport (VSF), Springfield, VT  
Region: Northeast  
Contest Director: Bill Gordon  
Contact Information Primary Phone: 803 585 0366  
E-Mail: [wsgordon@earthlink.net](mailto:wsgordon@earthlink.net)  
Website: <http://iac35.aerobaticsweb.org>

**Salem Regional Aerobatic Contest (Mid-America)**

Saturday, July 13 – Sunday, July 14, 2013  
Practice/Registration: Friday, July 12  
Power: Primary through Unlimited  
Location: Salem-Leckrone Airport (SLO): Salem, IL  
Region: Mid-America  
Contest Director: Bruce Ballew  
Contact Information Primary Phone: 314-369-3723  
Alternate Phone: 636-778-0020  
E-Mail: [bruceballew@earthlink.net](mailto:bruceballew@earthlink.net)

**High Planes HotPoxia Fest (South Central)**

Saturday, July 13 – Sunday, July 14, 2013  
Practice/Registration: Friday, July 12  
Power: Primary through Unlimited  
Location: Sterling Municipal Airport (STK): Sterling, CO  
Region: South Central  
Contest Director: Dagmar Kress  
Contact Information: Primary Phone: 303-887-4473  
E-Mail: [DagmarAerobatics@me.com](mailto:DagmarAerobatics@me.com)  
Website: [www.iac12.org](http://www.iac12.org)

**Hoosier Hoedown (Mid-America)**

Saturday, August 10 – Sunday, August 11, 2013  
Practice/Registration: Friday, August 9  
Power: Primary through Unlimited  
Location: Kokomo Municipal Airport (OKK): Kokomo, Indiana  
Region: Mid-America  
Contest Director: Mike Wild  
Contact Information: Primary Phone: 765-860-3231  
Alternate Phone: 765-864-0096  
E-Mail: [mike.wild@hotmail.com](mailto:mike.wild@hotmail.com)  
Website: [www.hoosierhammerheads.com](http://www.hoosierhammerheads.com)

**Beaver State Aerobatic Contest (Northwest)**

Friday, August 23 – Saturday, August 24, 2013  
Practice/Registration: Thursday, August 22  
Rain/Weather: Sunday, August 25  
Power: Primary through Unlimited  
Location: Eastern Oregon Regional Airport (PDT): Pendleton, OR  
Region: Northwest  
Contest Director: John Smutny  
Contact Information: Primary Phone: 206-399-7097  
E-Mail: [johnsmutny@gmail.com](mailto:johnsmutny@gmail.com)  
Website: <http://www.iac77.eaachapter.org/>

**2013 Upper Canada Open (Mid-America)**

Saturday, August 24 – Sunday, August 25, 2013  
Practice/Registration: Friday, August 23  
Power: Primary through Unlimited  
Location: Chatham Kent Municipal Airport (CNZ3), Chatham ON, Canada  
Region: Mid-America  
Website: <http://aerobaticscanadachapter3.blogspot.com>

**Oshkosh 2013 (Mid-America)**

Saturday, August 24 – Sunday, August 25, 2013  
Power: Primary through Unlimited  
Location: Wittman Regional Airport (OSH): Oshkosh, WI  
Region: Mid-America  
Contest Director: Audra Hoy  
Contact Information: Primary Phone: 920-203-9000  
E-Mail: [audra\\_hoy@yahoo.com](mailto:audra_hoy@yahoo.com)

**East Coast Aerobatic Contest (Northeast)**

Saturday, September 7 – Sunday, September 8, 2013  
Practice/Registration: Friday, September 6  
Power: Primary through Unlimited  
Location: Warrenton-Fauquier Airport (HWY), Midland, VA  
Region: Northeast  
Contest Director: Scott Francis  
Contact Information Primary Phone: 703-618-4132  
Alternate Phone 703-327-3135  
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## MEET A MEMBER

BY GARY DEBAUN, IAC #4145

# Casey Erickson



IAC 433183

Nickname: Batgurl

Occupation: Aeroplane Racer #8

Chapter Affiliation: 36 & 49

Age: None of your business

E-mail: [casey@allwaysair.com](mailto:casey@allwaysair.com)

### **GD: Casey, I know none of your family members fly, so how did you get your start?**

CE: My grandpa was an electrical engineer and had an avionics shop at Palomar Airport for about 35 years, and my mom used to take me up there to visit him, and I would watch the planes land and take off. My mom tells me I always said I would be a pilot when I grew up (though I don't really recall this). I do remember seeing the small planes coming and going, and I was sure they were off to China, India, and Africa... all very far away exciting exotic places, and I knew I wanted to do that, too.

### **GD: You race the #8 Pitts at Reno every year plus fly competition aerobatics. Are there any crossover skills in play here?**

CE: Racing at Reno is a different skill set for the most part, though the aircraft control and confidence you get from flying aerobatics I think do make a big difference. There was a time when I got too close behind another aircraft and got rolled upside down coming off pylon two at 30 feet off the ground, and I remember thinking, "Step on top-side rudder," and it probably saved me as I had full opposite stick in, and I was still rolling. I realized it would be better to stop fighting the rolling moment and fly the turn inverted and out of the vortices before trying to roll back upright. Without the aerobatic experience, I'm not sure the outcome would have been what it was. I lost no altitude and rolled back upright and continued on in the race...though it did get my attention.

### **GD: How did you get the nickname "Batgurl"?**

CE: The S-1S I bought, which was built by Steve Wolf and Herb Ross, has a big bat symbol painted across the bottom of the wings; people started calling me "Batgirl," and it stuck...of course when I went to get license plates for my car Batgirl was taken, but Batgurl was not...so I took it. At first I wasn't sure I liked this whole bat thing, but people seem to eat it up, especially the race fans up at Reno, so at some point you accept it and just have fun with it.

### **GD: You have been heavily involved in California aerobatics over the past several years; how have things changed since you got started, and is the IAC on the right path?**

CE: That is a really loaded question. Yeah, in the last four years I have been CD/Co-CD for about 12-14 different contests. I do not think that much has changed in the IAC in the last five to six years, which is unfortunate. I think more could be done to encourage people to get involved and stay involved with the IAC and contest flying at the lower levels,

but right now I don't think we have the will to make the changes that are required for this to happen.

### **GD: What is your favorite contest and why?**

CE: Another tough question. Borrego is probably my favorite, as I love the location, and the regulation CIVA box is the best marked box in the country. This contest seems to always bring out a great group of people, and the vibe is generally very relaxed and friendly.

### **GD: Will we have a contest at Redlands this year?**

CE: I do not know. The IAC 49 board met sometime in February and would make that decision.

### **GD: Has your back injury slowed you down at all?**

CE: Yes, it has slowed me to a near stop. Five herniated discs (two may have to be removed they are so badly damaged), L3/L4 vertebrae 35 percent crushed, a broken ankle, and the torn rotator cuffs in my shoulders have stopped me from all aerobatics for the last year or so, but finally I am slowly starting to get back up flying again, and I'm hoping I will be able to fly several contests this year in Intermediate.

### **GD: Who in the sport, either air racing or aerobatics, has been your mentor, or who do you admire the most and why?**

CE: I don't think I can pick one particular person. Rather, I think there are a whole bunch of people too numerous to mention that I have spent many hours with, listening to, and watching them fly, sharing techniques and attitudes towards safety. Basically that would include most of the members of IAC 26, 36, 49, and probably 38 as well. I have met so many interesting people, whom have taught me so much...hopefully I can continue to learn for a long time to come.

### **GD: What plans do you have for the future?**

CE: Right now, my biggest goal is to get my back better, and bring my proficiency level back to where it was a few years ago. Also, I have begun work on a set of modified S-1C wings that I hope will get me into the Gold race up at Reno this year. I do have some bigger plans on the horizon, but I am not ready to divulge those yet.

IAC

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things don't always go  
according to plan!**

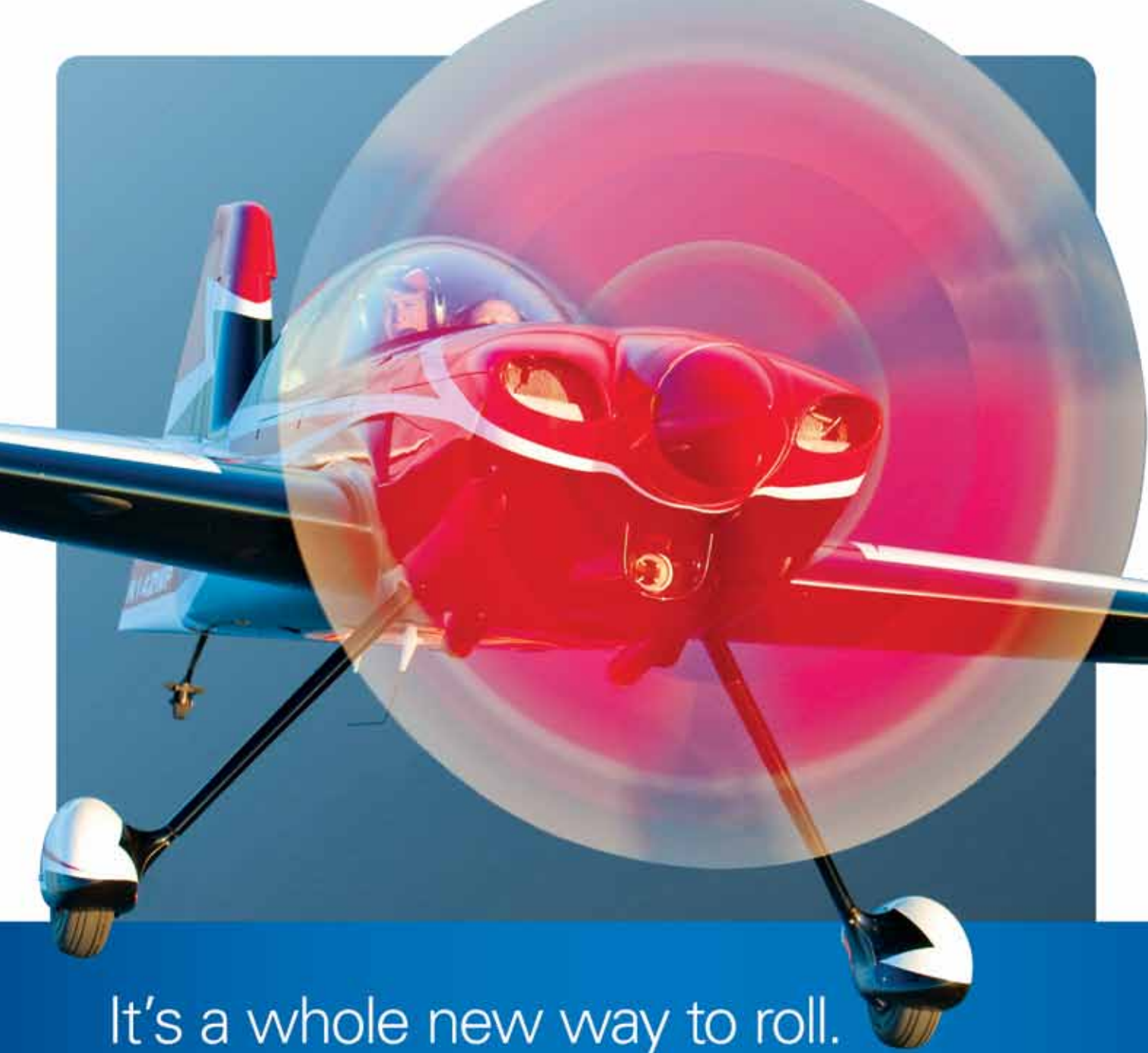


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