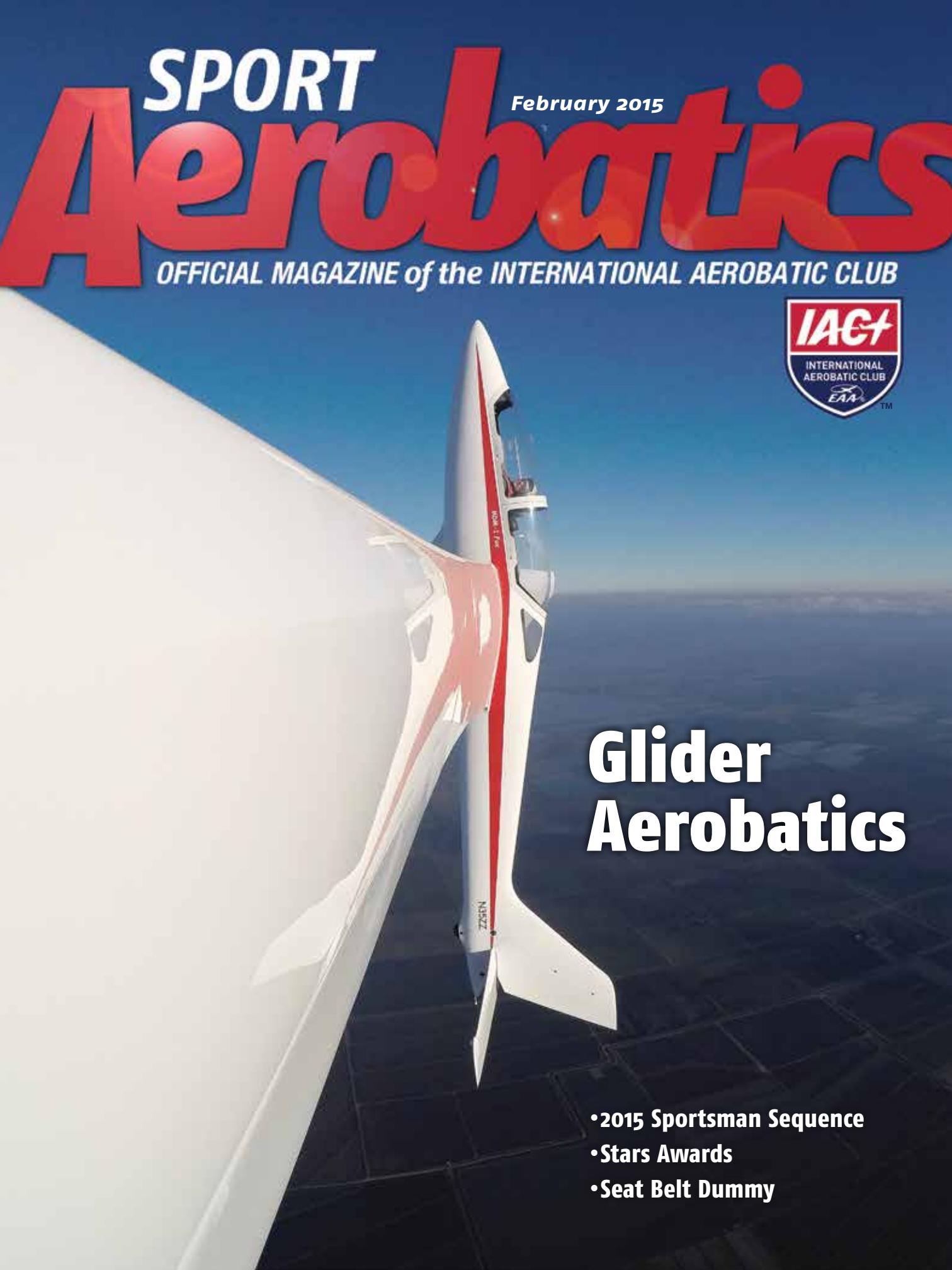
SPORT Aerobatics
February 2015
OFFICIAL MAGAZINE of the INTERNATIONAL AEROBATIC CLUB



Glider Aerobatics

- 2015 Sportsman Sequence
- Stars Awards
- Seat Belt Dummy

2015 Focus ST

The new Ford Focus ST ups the ante for performance hatchbacks with aggressive styling and superb driving dynamics. Engineering enhancements to the suspension and steering provide greater responsiveness, agility and precision – delivering an exhilarating driving experience for the performance enthusiast.

ST comes equipped with a 2.0-liter EcoBoost® engine with twin independent variable camshaft timing and high-pressure direct injection to deliver uncompromising performance, with peak output of 252 horsepower.

The engine is paired exclusively with a six-speed manual transmission with a performance-oriented, short-throw shifter. The gear ratios – exclusive to ST – deliver rapid acceleration in lower gears and comfortable cruising at speed.

And ST's aggressive styling starts with the exterior and extends through the cockpit. A much lower, wider stance; new dynamically sculpted hood; slimmer headlamps and rectangular fog lamps all add to the dramatic exterior look.

The cockpit-style cabin includes a central instrument pod which vividly displays turbocharger boost pressure, oil temperature and oil pressure information. A new, flat-base sports steering wheel with a soft-feel leather covered rim, a satin chrome-topped gear lever and ST pedals deliver the interior ST drivers expect. And sport seating, developed jointly by Ford and Recaro, provide the support required to fully enjoy the ST driving experience, along with comfort for everyday commuting.

2015 Ford Focus ST – a true driving experience!

The Privilege of Partnership

EAA members are eligible for special pricing on Ford Motor Company vehicles through Ford's Partner Recognition Program. To learn more on this exclusive opportunity for EAA members to save on a new Ford vehicle, please visit **www.eaa.org/ford**.

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SPORT Aerobatics

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Rex keeps his ear to the ground for the availability of desirable aircraft for sale. A scarce MDM-1 Fox blipped on his radar a few years ago. It needed some work, but that is his specialty. Williams now had a fully aerobatic capable glider on the field.
—Beth Stanton

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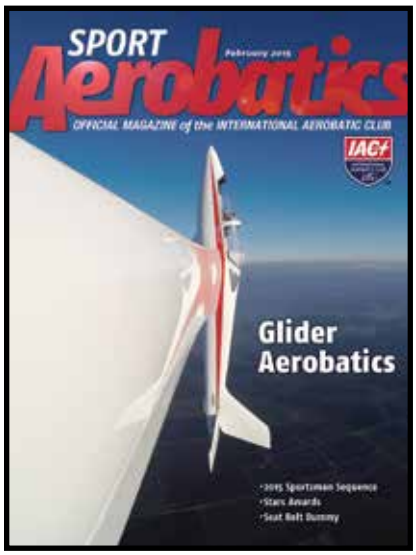

THE COVER

Eric Lentz-Gauthier performs glider aerobatics.

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REGGIE PAULK
COMMENTARY / **EDITOR'S LOG**

Add some tricks to your bag

THE FIRST AIRCRAFT I SOLOED was a Schweizer 2-33 glider back in 1992—when I was 16 years old. Soon after that, it was also the first aircraft I flew with a passenger, my dad, after earning my private pilot certificate.

For those of us who value true stick-and-rudder skills, gliders—especially of the 2-33 variety—demand those skills in abundance.

This month's cover prominently displays an MDM-Fox glider going vertical. I always brace myself a bit when we run gliders. Some members are quite vocal about the fact that very few of our competitors fly gliders, and think we're just wasting valuable magazine real estate running stories about them. As a pilot who cut his teeth flying gliders, I tend to disagree with that assessment.

For those of us who value true stick-and-rudder skills, gliders—especially of the 2-33 variety—demand those skills in abundance. Sporting a 52-foot wingspan, a single main wheel behind the center of gravity, and spring wheels on its wingtips, the 2-33 must literally be flown from the second you enter the cockpit to the second you leave.

Pilots who fly aerobatics regularly are familiar with full-deflection control inputs as a way to obtain maximum performance from their airframes. Glider pilots become familiar with full-deflection control inputs on every takeoff. From the second you begin your takeoff roll, the glider must be flown with authority to keep it in position behind the towplane. Did I mention that brand new glider pilots must learn to fly formation on their first flight as well? If you really want to experience adverse yaw, where the nose swings opposite the direction of aileron input, a glider with ailerons 25 feet from the cockpit is a great way to experience it.

Gliders teach their pilots to hold position exactly, using as much control input as necessary to do so. Aerobatic pilots probably hear a familiar ring in that statement. I don't think I've ever talked to an aerobatic pilot who's flown gliders who would say the experience hasn't enhanced their overall skill set. Flying gliders puts one more feather in your hat, and ads a new set of tricks to your bag. *IAC*

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

MIKE HEUER
COMMENTARY / **IAC PRESIDENT, IAC 4**

Please send your comments, questions, or suggestions to: *mike@mheuer.com*

Your First Ride

ALL OF US GO THROUGH experiences and contacts with people at various stages in our lives, and as we mature, we come to appreciate how they altered the course of our lives. Sometimes it is a conversation, something you read, a teacher in school you never forget, some advice you received, or something you did. For me, as it has been for hundreds of other pilots, it was that first aerobatic ride. Mine was on August 5, 1965, and I was 15 years old.

A couple of years before that, my father had purchased a rebuild project—an N3N-3 out of Navy surplus. They were the last biplanes to be operated in U.S. military service, having flown their last hours at Annapolis and finally retiring in 1959. The airplane finally made it into the air in early August 1965, and shortly after the first test flight, I found myself in the front cockpit of the N3N with my father in the rear.

He had first learned aerobatics back in the late 1940s and early 1950s and worked not far from the home airport of the Cole Brothers Air Show during that time. He often talked about Marion Cole's performances in the 450 Stearman. After working on the N3N for more than two years, it finally made it into the air in that first week of August 1965.

When I strapped into the front seat, I knew aerobatics was on the plate, and I had never done anything other than a steep turn and a spin. After we did that first roll and loop, I was hooked for life. What a thrill it was to feel the *g*-forces and to view the world from upside down. Not long after that first ride, Dad let me have the controls, and he took me through the basics of aerobatics, which I later did solo in the N3N after my 16th birthday.

From those days forward, aerobatics has been a part of my family and way of life. The thrill never went away—but with experience came a comfort, confidence, and trust in my own abilities and skills as a pilot that have stayed with me forever. I cannot imagine being a private pilot, much less a professional as I went on to be in later life, without having aerobatics as a key part of my early training.

We did go beyond those early steps, however, as our family was wont to do. Never satisfied with just some occasional aerobatics, we got serious about it, and my father's first aerobatic competition came in 1966 at EAA's aerobatic competition in Harvard, Illinois. EAA organized several competitions at that airfield before EAA moved the fly-in (now called AirVenture) to Oshkosh in 1970, and the IAC was formed that same year. My first competition came in 1968. When I finally went on to U.S. Air Force pilot training in 1972, I was an experienced aerobatic pilot—and my instructors and I had a lot of fun while I was learning the military way of flying aerobatics.

Today, in this magazine and in our countless conversations with fellow IAC members, we often talk about the technicalities, mechanics, and details of aerobatics. Rules, judging criteria, contest organization and staffing, budgets and finances, and all sort of things. But I often think back to that first aerobatic ride and what a difference it made in my life. I invite you to do the same—to reflect on what aerobatics means to you and why we must pass its value on to others.

Last month, I announced "The New IAC." We featured our new logos and branding in the January issue. But it's not all we are updating or improving. In the months ahead, I hope to continue to upgrade our organization, the value it brings to our members, and to introduce new programs to bring people into aerobatic flying. The IAC has the finest stick and rudder pilots in the world—no question about this. Our airplanes are not all about the latest electronic gizmos we can hang in them (we use them to get to contest sites); they are about flying at the most basic. Stick, rudder pedals, and throttle. Since we fly to all the edges and corners of our airplanes' performance envelopes, we become a part of our airplanes—they are extensions of us as pilots. It is a wonderful feeling.

In my early hours of flying, stalls frightened me. After a few hours of aerobatics, that fear went away. I knew I could handle an airplane no matter where I found myself. The wisdom of experience came later. Aerobatics is something we need to promote not just because it will bring new members into the IAC, or as a road to competition, but rather because it is the right thing to do. The aviation industry has come to grips with the need for the kind of skills we possess in our community—be it upset training or unusual attitudes or whatever the latest buzzwords are. We have known the value of those skills for a very long time.

Think about your first ride—and join us in getting out the word. *IAC*

ASK MIKE

Call or write at any time. My home number is (901) 850-1301. E-mail *mike@mheuer.com*

LINES & ANGLES

BY MIKE HEUER

IAC Communications

Though all of the IAC membership receives *Sport Aerobatics* magazine, members are reminded that IAC communicates to aerobatic enthusiasts in a variety of ways.

First and foremost is the IAC website (*www.iac.org*). The website provides hundreds of pages of information as well as news articles with up-to-date developments. IAC webmaster is DJ Molny, who is constantly improving the site, and a number of people in IAC leadership positions are contributing editors. IAC members also have access to a number of pages and features on the website, including the ability to download the "IAC Official Contest Rules" in PDF and free of charge.

IAC also has two Twitter accounts. **@IACHQ** is for general news and tweets go out throughout the year. **@usnacro** is for the US National Aerobatic Championships and is particularly active in the days leading up to and during the Nationals in September. We urge you to follow us on Twitter for the news and links it provides.

IAC's e-newsletter, *In The Loop,* available by subscribing on the IAC website. It is published monthly and edited by Reggie Paulk. *In The Loop* includes photos and links to other websites of interest to aerobatic enthusiasts as well as short news articles of current interest.

Wes Liu Appointed IAC Judges Chair

Wes Liu of Brookline, New Hampshire, has been appointed the new chair of the IAC's Judges Program. The program serves to certify and renew IAC regional and national judges and to organize judges schools across the country. Since all contests require competent judges, the program has been one of IAC's most important initiatives since 1970. The judges chair also serves on the IAC Rules Committee.

Wes has been a member of IAC since 1984 (IAC #10467), served as a chapter president, been a national judge since 2007, and has competed since 2002 in his Pitts S-2A and currently flies Intermediate category. His most recent contribution to *Sport Aerobatics* magazine was in September 2014 when he authored an article titled "Effective Aerobatic Judging."

Wes takes the reins from Greg Dungan, who has run the program for many years. Our congratulations and thanks to Wes for taking on this important assignment, and sincere appreciation to Greg Dungan for his many years of service to the sport.

Nominations for Officer and Director Positions

If you are interested in running for an officer or director position this year, here is what is required to become eligible:

Complete the candidate petition form and obtain 10 current IAC member signatures. The form is available for download on the IAC website (*https://www.iac.org/legacy/iac-leadership*). Please note that each member can sign a petition form and submit via e-mail. (All names do not have to be placed on one form.) Written e-mails as endorsements will *not* be accepted; it must be on the petition form. Please include a current photo (jpeg) of the candidate.

Submit a resume/bio (fewer than 1,000 words). These will be printed in the magazine prior to the election and inform the members of your qualifications for office and goals for your service.

The nominations chair must receive the above before the March 8, 2015, deadline. Send completed petitions and photos via e-mail (*ljstoltenberg@gmail.com*) or regular mail to Lynne Stoltenberg, 656 Windy Acres Road, Brenham, Texas 77833-7732.

The offices up for re-election this year include vice president, treasurer, and four director positions.

The 2015 US Nationals

Plans for the 2015 US National Aerobatic Championships are well underway. The event will be held at the North Texas, Regional Airport (KGYI) in Sherman/Denison, Texas on September 20-25.

Gary DeBaun of Lakeville, Minnesota, has been appointed the contest director for the 2015 US National Aerobatic Championships. Gary is a veteran IAC member of 36 years, holding member #4145, and has served as the starter and tech monitor at the Nationals since 2010.

In addition to his Nationals experience, he served at the 27th FAI World Aerobatic Championships as flight director and as a contest director at many IAC Chapter 78 regional contests. The owner of a Pitts S-1, Gary works seasonally at Arizona Soaring.

Planning for the Nationals has already begun and contest positions are now being filled. The Nationals will include all categories of aerobatic competition in both Power and Glider—as well as the site for the selection of the US Advanced Aerobatic Team, which will compete at the FAI World Advanced Aerobatic Championships in Radom, Poland, in 2016.

Bob Harris will serve as Contest jury chairman for

the Nationals. Bob is from McMinnville, Oregon. A competition pilot, he has flown in all categories except Unlimited, became a regional judge in 2004, and a national judge in 2007. He has been a chief judge at more than 15 contests in the last few years and grading judge at many more. He is a member of Chapters 77 and 67 as well as the Aerobatics Canada chapter in Alberta.

Most of the remaining key officials for Nationals are familiar faces to those who have attended in recent years. Chief judges will be Charlie Harrison (Unlimited), Lynne Stoltenberg (Advanced), Kevin Campbell (Intermediate), and Peggy Riedinger (Primary/Sportsman). A complete list of officials is provided on the IAC website.

Thanks to the work of DJ Molny, our IAC webmaster, the Nationals website is now incorporated into the IAC's web pages and all Nationals information can be found in various pull-down selections there. Go to *https://www.iac.org/us-national-aerobatic-championships*.

IAC Assumes Responsibility for US Aerobatic Teams

Under the terms of a letter of agreement between IAC and the National Aeronautic Association in Washington, DC, IAC has been delegated complete authority to manage, administer, and control aerobatic competition in the USA. This includes the Nationals. NAA is a member of the Fédération Aéronautique Internationale in Lausanne, Switzerland, which is the sanctioning body for all international air sports. Along with that authority came the responsibility to field US aerobatic teams in world competition. US teams now exist in the Unlimited and Advanced power and glider categories and are selected at the Nationals each year. The Unlimited team chosen at Nationals last September will compete at the 28th FAI World Aerobatic Championships in France this coming August.

The IAC will be setting in place a new internal organizational structure to handle the teams and is also accepting donations for the team efforts. IAC is a 501(c) 3 corporation in accordance with the IRS tax code and donations are fully tax-deductible. Though the pilots are largely "self-funded" in 2015, we will try to offset as many of their expenses as we can as future fund-raising programs are developed.

Team manager for the 2015 US Unlimited Team is Michael Steveson, IAC director from Scottsdale, Arizona. Michael has previously served as manager for both Unlimited and Advanced teams. Chief delegate of the US Team will be Mike Heuer, IAC president and the USA's delegate to CIVA.

IAC Open Championships for 2015

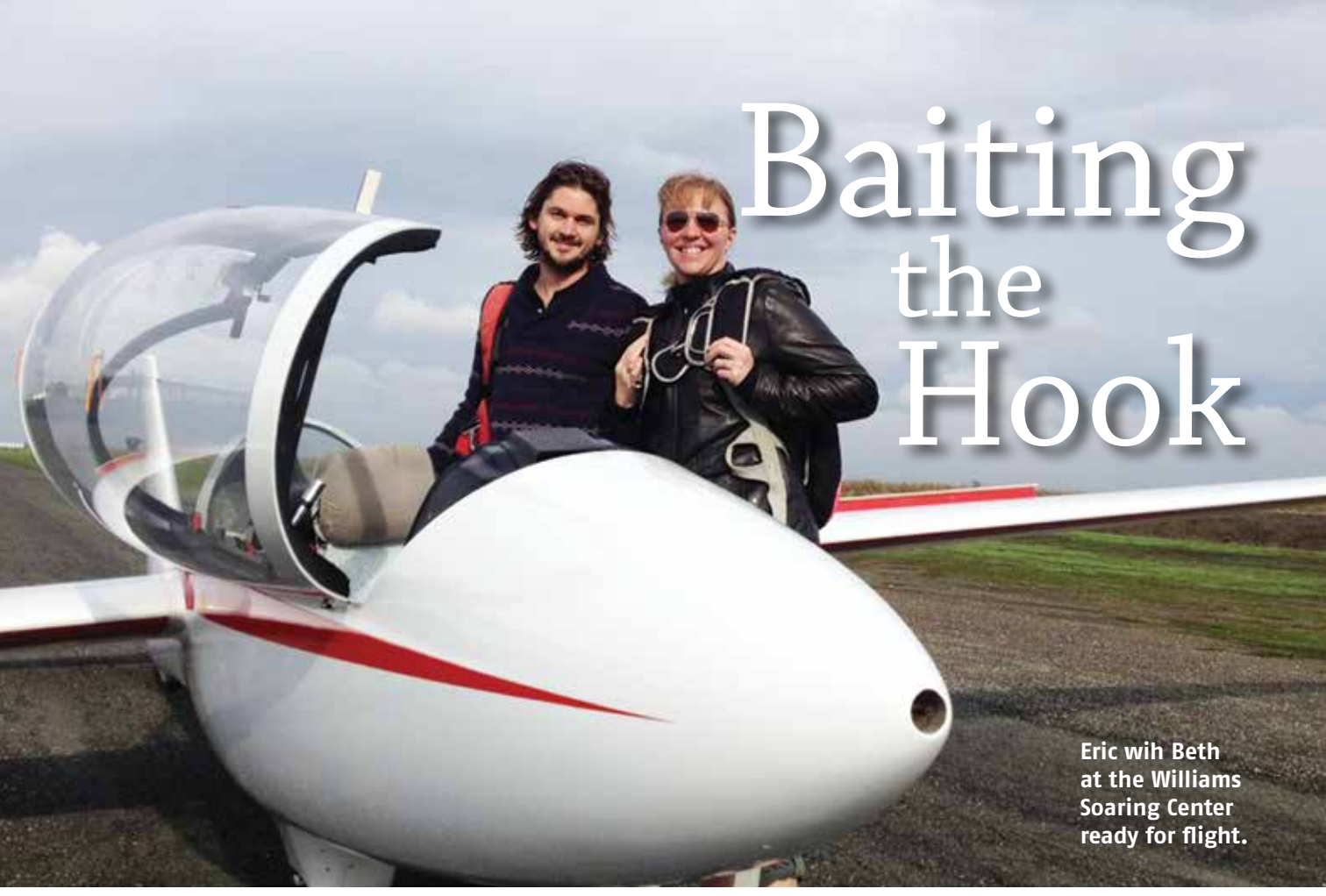
The Board of Directors has accepted Chapter 3's bid to host the IAC East Open Championships in Rome, Georgia. The contest will be held on June 4-6, 2015 with Ken Lumpkin serving as contest director.

For the West Open, Chapter 80's bid to hold the championships in Seward, Nebraska, was accepted. The Seward contest will be held on June 27-28 with Ed Bowes as its contest director.

A competing bid from Chapter 38 to organize the contest in Coalinga, California, was not accepted as IAC policy states that Opens must be held in different regions and the 2014 West Open was held in California, thereby making Coalinga ineligible. We do expect a bid from Chapter 38 for 2016, however, as it is a fine location.

Winners of these competitions can claim the titles of "IAC Open 2015 Champion (*category*)".

Bids for the 2016 Open Championships are welcome at any time and will be considered by the board of directors in November 2015 when it meets in Oshkosh. More details on these contests can be found in the calendar of events in *Sport Aerobatics* as well as on the IAC website. IAC



Baiting the Hook

Eric wih Beth at the Williams Soaring Center ready for flight.

Soaring a homey atmosphere

BY BETH STANTON
bethestanton@gmail.com

Glider aerobatics is kind of like power aerobatics. Except that everything is, well, different.

IAC 38 member Eric Lentz-Gauthier has been twisting my arm for the past year to come to the Williams Soaring Center (*www.WilliamsSoaring.com*) in Williams, California, to give gliders a try. I had never been in a glider before, but *aerobatic* gliders? Now that seemed fun. With the contest season over for the year, the time had come.

Eric's motives for nudging me to try gliders were multifaceted. There aren't many aerobatic glider pilots, nor is there much glider presence at IAC regional competitions. In fact, there are few actual aerobatic gliders in existence. For several years, a contingency of pilots at Williams have been making efforts to incite interest in glider aerobatics. Eric was baiting the hook by inviting me to fly with him. I was a willing party for the cause.

Dave Watson, our chapter vice president, had his first glider flight with Luca Bertossio, the 2013 Advanced Italian glider champion, in May after Luca flew his ACE evaluation with Sean D. Tucker in our chapter practice box. Enchanted with glider flight, Dave waxed lyrical about the experience in an article featured in the July 2014 issue of *Sport Aerobatics*. He was up for more glider action. In November, we made the trip to Williams.

A Special Place

Williams Soaring Center is an inviting place with a homey atmosphere. Rex and Noelle Mayes along with their sons, Ben and Nick, have owned and run the full-service gliderport since 1993, relocating there after starting at Lagoon Valley in Vacaville in 1984.

Everywhere you look there is evidence of impeccable attention to detail and growth. The FBO is pristine and includes a large gathering space, along with pilot bunk

Bob the three-legged cat regularly roams the FBO for attention.

rooms, a kitchen, and a lounge. A new hangar is in the process of being built. The friendly and social environment is heightened by a menagerie of furry creatures, including several dogs and a three-legged cat named Bob, who freely roam the ramp and FBO, soliciting petting and attention.

There is a rich history of aerobatics at Williams. Rex Mayes is an accomplished aerobatic pilot in his own right, having flown competition back in the day in a Pitts S-1. For years, CFIs Kenny Price, Charlie Hayes, Mallory Lynch, and, more recently, Drew Pearce have been training pilots in the aerobatic ASK-21 glider. This trainer is good for most positive maneuvers but is not configured for spins. The focus was on recreational aerobatics as well as unusual attitude and recovery training. Without a two-seat, fully aerobatic-capable glider, training to competition standards wasn't a feasible option.

Rex keeps his ear to the ground for the availability of desirable aircraft for sale. A scarce MDM-1 Fox blipped on his radar a few years ago. It needed some work, but that is his specialty. Williams now had a fully aerobatic capable glider on the field.

First Contact

Eric and I walked out to the ramp sprinkled with multiple gliders. I had never seen them up close in the wild before. I marveled at the sleek, sperm-cell shaped composite pods. To my newbie eye, they looked foreign and a bit sketchy . . . gossamer and eggshell-fragile. I imagined what it might feel like to sail the sky in silence. I didn't have to imagine for long.

As Eric preflighted the Fox, the dogs and I trailed his heels. He explained the instruments and controls, adjusted the ballast, and said, "The pilot flies from the front seat." As I started toward the back seat, he said, "No, you're flying from the front."

Oh, boy.

I was in good hands. Eric has been flying gliders since his first lessons at age 13. He soloed at 14, and got his certificate at 16. He knew from the outset that aerobatics was his passion and has been flying the ASK-21 glider ever since.

With the acquisition of the Fox, he was able to train for serious competition and made his glider debut in the Unlimited category in 2013 at the U.S. Nationals. With this performance, he made the U.S. Glider Aerobatic Team. In 2014 he flew in both the Polish Nationals and the World Glider Aerobatic Championships held in Torun, Poland.

I met Eric in the power aerobatics world. He flies a Yak-55 in the Advanced category. It was intriguing to discover that his aviation roots were firmly planted in gliders.

We strapped in, latched the canopy and ran through the checklist. The ritual of the tow was fascinating. The person who assists the glider takeoff is called the *garcon*, which charmingly translates to "line boy." The knot is held up for Eric's inspection before the rope is attached to the glider. Eric signaled his readiness to the towplane by wagging the rudder. The towplane echoed a puppy-playful wag back and we were off.

The colossally long wings sprang instantly into the air. Hovering aloft, the glider was suspended above the heavy towplane for a few heart beats until the Pawnee generated its own more ponderous lift.

Eric handed control of the glider to me for our climb to 6,000 feet. Very light input and finesse is required. I was instructed to keep the Pawnee on the horizon with its tail wheel between the mains. "It's like flying formation!" I exclaimed. "Yes, with training wheels," Eric said with a laugh.

With a laser-focus and wide eyes, I was able to keep the glider in position. However, one glance around to look for the airport or to marvel at the clouds, and the glider immediately drifted cockeyed out of position. Eric patiently coached me back in line.

Releasing the towrope clicks *start* on the energy management stopwatch. It is pure attitude and airspeed that determines your amount of time from here to the ground. To maximize the fun between 6,000 and 1,500 feet, we planned ahead what we were going to do. Precious time would be wasted by asking, "So, what do you want to try next?"

It was clumsy at first, but after a few maneuvers, I started to get the hang of it. With such enormous wings, slow rolls are *slooooooow* rolls. Uplines are short. There is no torque. The nose points slightly below the horizon between figures.

It was not entirely silent like I imagined. Without an engine, you hear the creaks and groans of the plane, not unlike the sounds of a boat at harbor. Then there is the rush of the wind as you dive. But it is in no way *loud*. You are not wearing a headset and can speak in conversational tones for the majority of the flight. Except, of course, for the "Woo-hoos!" and "Yee-haws!"

Then . . . there was a breathtaking instant at the apex of a vertical upline. Time seemed to stand still, and for that split second it was as if all motion and sound ceased to exist. Words are poor substitution for this stunning experience. Hanging in suspended animation,

Dave and glider pilot Dan aspiring to aerobatics.

a flash lasting an eternity. Pushing the stick into a tailslide started the world back up again. I want do uplines over and over again to relive that sensation.

A Whole New World

Our second flight was a spectacular evening flight punctuated by sunset-dazzled clouds. We stayed for the Valley Soaring Association's holiday party and guest speaker. A fantastic catered Mexican dinner was followed by a presentation from Pete Alexander telling the inside story of flying at the World Gliding Championships in Leszno, Poland.

This is a cross-country soaring race. Listening to the glider pilots at the table throughout the evening, I realized I had stumbled upon a whole new world of aviation. This world had different craft, design, and language . . . but exhibited the same encompassing welcome, recognizing any fellow pilot who craves the sky.

I was invited after the presentation to introduce myself and say a few words about aerobatics and the IAC. Earlier, I had set out IAC literature, *Sport Aerobatic* magazines, and business cards. Dave, Eric, and I played aerobatic ambassador for the evening.

Dave and Drew after Dave's first formal glider lesson.

AcroFest

One of the people I met that weekend was Guy Acheson. While flying gliders at the French national soaring facility at St. Auban, he witnessed the French national aerobatic glider team. He was smitten. When he returned to the United States, he searched for two years and finally found an Unlimited-capable, single-seat SZD-59 glider and began flying it at Williams. In 2010 he entered his first aerobatic competition, the Tequila Cup, placing second in Sportsman.

Guy Acheson

I received this e-mail from Guy a few days after my return from Williams:

"My goal is to have an event in 2015 at Williams with glider pilots and also invite power pilots who are interested in flying acro in gliders. My vision is to have an IAC judge present so that people could fly to qualify for Smooth Awards. Beth, for this to work we need a judge. Be it Dave or someone else from your chapter, this would be a good bonding experience. It would be great fun if we could include power pilots who would like to experience glider acro."

I learned that in 2010, Guy and Mallory Lynch had put together an event called AcroFest. The goal was to introduce pilots to glider aerobatics by focusing on safety and understanding the limitations of plane and pilot. Guy subscribes to

Guy and his SZD-59 glider.

the belief that that learning to fly figures to competition standards adds a significant safety margin by teaching precision and control. He observed that the casual aerobatic pilot can potentially fly figures in a fashion resulting in loss of aircraft speed control or orientation in space. Working to competition standards is safer for the pilot, other aircraft in the area, and less stressful to the aircraft.

Guy and Mallory put out the call to anyone interested in exploring unusual attitudes, recreational aerobatics and/or competition aerobatics. AcroFest was hugely successful and repeated the following year.

AcroFest participant Bob Ireland wrote Guy:

"Without your boundless energy and enthusiasm for the sport, the weekend literally wouldn't have gotten off the ground. We're lucky to have instructors like you and Mallory to take the stress out of what could otherwise be a daunting experience. Learning that it's okay to try a new maneuver and fail, and have the glider and the mentor bring me home in one piece made it possible to relax and appreciate the beauty and sensation of the figures when I finally got one right. Having video of the view from the cockpit just ROCKS! I hope we can make this an annual event."

AcroFest is happening again March 7-8, 2015. IAC 38 will be present with full support: a bunch of power pilots chomping at the bit to try out glider acro, coaching, and judging for Smooth Awards. As Dave Watson mentions in his Stars Awards article in this issue of *Sport Aerobatics*, the IAC Stars and Smooth Awards programs are powerful incentives that allow pilots to have structure, progression, and mark the achievement of their aerobatic goals.

Luca getting ready to fly for the Unlimited Smooth Award.

Luca and his Unlimited Smooth Award.

Quest's Primary and Sportsman Awards.

Quest and CFI Drew getting ready for Quest's Primary and Sportsman Smooth Awards.

A Winter Preview

CFI Drew Peace has compiled a list of about 20 pilots who have shown an interest in glider aerobatics. Since Drew, Eric, and Luca were all available one weekend in December, they decided to host an impromptu acro day on December 14, 2014. They'd be on hand for questions, demo rides, and coaching.

To further motivate people to turn out, Dave was invited to come and judge anyone who wanted to fly for a Smooth Award. I tagged along with the full intention to judge assist and learn about judging gliders. Flying wasn't even necessarily in the cards. Then I spied the figures for the Primary and Sportsman Smooth Awards. My greyhound-and-rabbit reflex was tripped. I could *totally* do this. Giddily, I shifted gears to fly.

Nine pilots flew that day. Four pilots were awarded seven Smooth Awards: Luca: Unlimited Smooth. Matthias Mederer, Quest Richlifem, and me: Primary and Sportsman Smooth. Dan Clark, a glider pilot thinking about competition, got his first acro flight with Luca in the Fox. Art Thompson also flew with Luca. Drew, Eric, and Luca flew as safety pilots and coaches. As a thank-you for his judging, Dave had his first formal flight lesson with Drew toward his glider rating.

Since Matthias wasn't an IAC member, he signed up right away so he could get his Smooth Awards. Dan decided to be checked out in the ASK-21 and is starting competition aerobatic coaching with Eric in the Fox.

Gliders in the Future

We are excited about the possibility of having a glider category at our Coalinga contest this year. Guy Acheson was the guest speaker for our January chapter meeting. He said, "The opportunity to fly with the power aerobatic community is exciting because it gets more power pilots interested in gliders and gives glider pilots an opportunity to learn from a community that has much more experience with competition flying. I look forward to AcroFest 2015 where IAC 38 and the Williams soaring community can fly together, swap stories, and learn from each other."

Get thee to a soaring center. Seriously, you have got to try this.

Join us for Williams AcroFest, March 7-8, 2015. IAC

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Flying the 2015 Sportsman Sequence

Tips and techniques for success

BY GORDON PENNER
MASTER CFI-AEROBATIC, FAA GOLD SEAL CFI

This year's Sportsman Known sequence has decent flow and energy, without too many of the elements that would punish low-horsepower/high-drag aerobats. So let's break this sequence down, with the newer aerobatic pilot in mind, and let's see what we find.

I also hasten to add that this article, and this sequence, is not just for competition. Many of you may not want to compete, or may not be able to compete due to LMS, or Life Management, er, Stuff, but this sequence can be something you can do on your own that is fun and personally challenging. Many RV and experimental pilots will be able to enjoy this sequence while staying within their airplanes' limits.

OVERVIEW

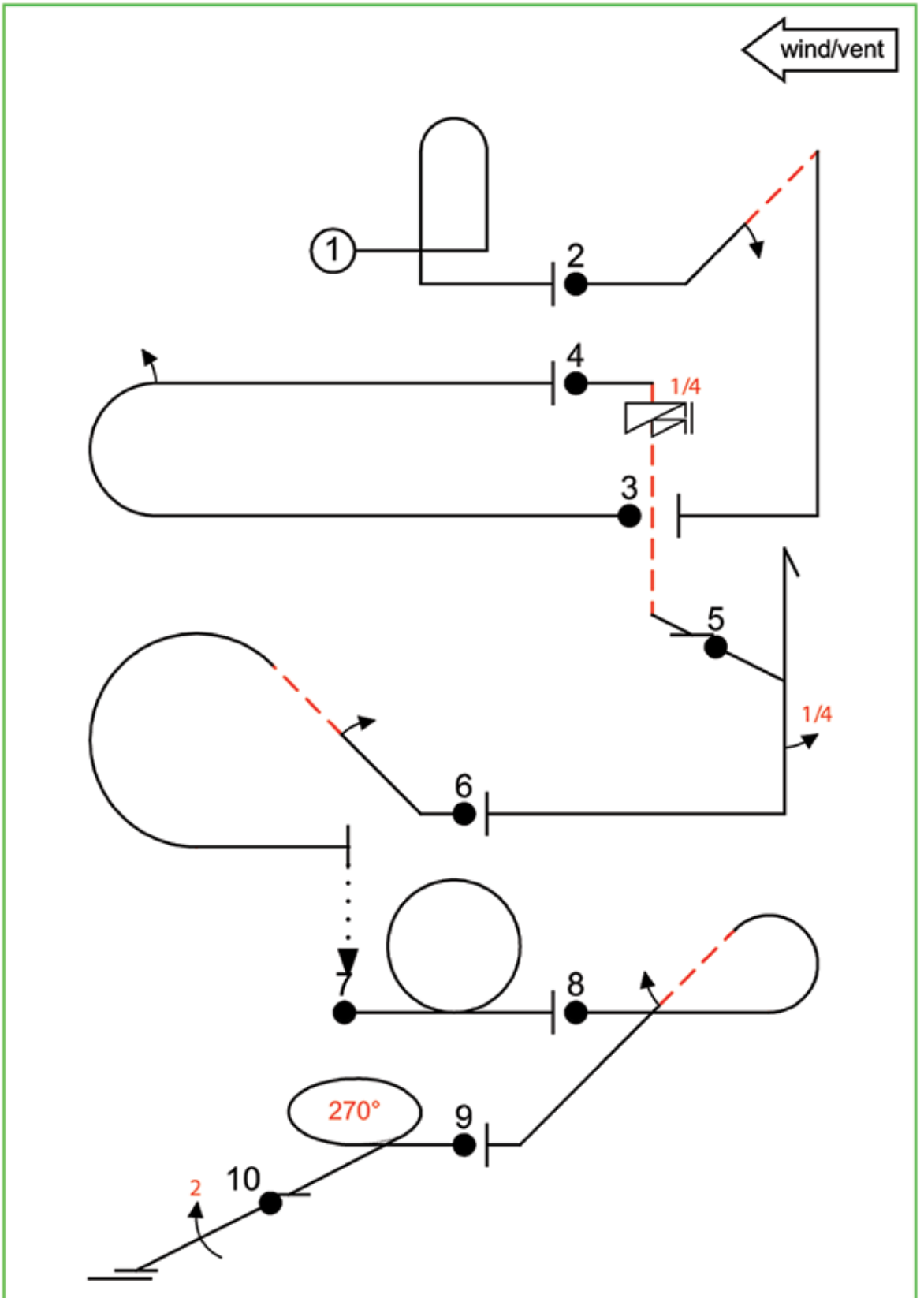
The key to aerobatics, as said by 1972 World Champion Charlie Hillard, is ". . . where to look and *when*." As you think about the sequence I want you to also think about when you are looking over the nose, and when you are looking past your sight gauge or wingtip to the horizon.

Also try to maintain what Aerobatic Coach John Morrissey calls "deep focus," where he maintains that a ". . . clear and distinct focus to the furthest point ahead of the aircraft's flight path must be maintained." In level flight he wants pilots to focus on a spot 20 miles away. When pilots are on a downline he says ". . . I want them to pick out blades of grass." Keep these things in mind throughout the sequence.

The breakdown of this sequence, actually any sequence, is in two parts—first strategic, then tactical. Think of strategic as big picture, and tactical as the detailed parts of each maneuver. Don't rush the strategic analysis.

Many of you will tend to move right into thinking about each maneuver individually. Instead, I suggest that you think of the sequence as a whole, and think of the big things first, like not busting the bottom of the box as well as staying in it.

I would have you think first about your starting altitude, and then about the placement of maneuvers in the box. If you get these two things set in your mind, and take care of them (strategic), you will then be more free to think about flying each maneuver as


wind/vent
1
2
4
1/4
3
5
1/4
6
7
8
270°
9
2
10

cleanly as you can (tactical).

I like what past IAC President Rob Dorsey said in one of his fine Stick and Rudder articles that have appeared in these pages. He said to think of the sequence like a game of billiards. You not only want to make a good shot; you want to leave the cue ball in a good position for the next shot.

ALTITUDE ANALYSIS

The first thing to think about is your beginning altitude. To find that number, you have to start at the last maneuver and work backward. With the performance level of a 150-hp Decathlon or Citabria in mind, I think most aircraft will lose altitude on maneuvers 8, 6, 5, 4, 2, and 1.

Considering Maneuver 10, the 2-point roll, low-horsepower/high-drag airplanes can roll at slow speeds, but they will usually be called "barreled" if they do so, even when they are not. These aircraft require some speed to show well in this roll, which means Maneuver 9's exit must have some speed to it.

Since Maneuver 9, the 270-degree turn, is an energy scrubber, that means that the 45-degree downline from the half-Cuban-eight must be long enough to feed in enough energy for both Maneuver 9 and 10. Some altitude will be lost there.

The speed you get out of the loop, number 7, can only be as much as the speed you put into it. As a result you must fly number 6, the reverse-half-Cuban, as fat and round as you can to get that speed, which will probably result in an altitude loss.

Slower rolling aircraft will take a bit of time to do the 1/4 roll on the downline from the hammerhead. This will produce the speed that Maneuver 6 wants, but will result in an exit altitude lower than the entry altitude.

A 1-1/4 spin with a good downline will result in at least 1,000-1,500 feet of altitude loss in these entry-level machines, so plan accordingly. As a newer aerobat you may not yet know the altitude losses or gains for most of the maneuvers in your airplane, but you *must* learn very quickly how much room you need to complete a spin. It is a *very* important number.

You will want to be fast out of Maneuver No. 2 so that when you go into Maneuver No. 3, the Immelmann, you will have enough energy for the all important half-roll at the top. That darn half-roll gives a lot of downgrades, so practice it so it comes off cleanly. Work on maneuvers 2 and 3 together so you are feeding that half-roll with the energy it hungrily demands.

POSITION ANALYSIS

Every sequence has a "key" maneuver that drives positioning of most of the maneuvers both before and after it. I received some coaching from U.S. Unlimited Team Member Brett Hunter, and he quickly said that Maneuver No. 6, the reverse-half-Cuban-eight, is the key to the sequence. Maneuvers 4, 7, and 8 are correctors.

Maneuver No. 6 has a downwind 45-degree upline, with a fast downwind entry from the hammerhead. Add in the tailwind and you have a setup for going out of the box on the downwind edge. Your 45-degree upline will also tend to look shallow to the flawed human judges due to the wind, even though it isn't. Pilots designing Freestyles try to avoid downwind 45's if at all possible.

You want to try to place the hammerhead, Maneuver No. 5, against the upwind edge of the box, and when you exit it don't waste time before getting right into performing Maneuver No. 6. You will get blown downwind a bit at the top of the hammerhead due to being slow there, so get into the beginning of the reverse-half-Cuban-eight as quickly as you can.

You also need to place the 1-1/4 spin, Maneuver No. 4, as close to the upwind edge of the box as you can. The exit of the spin is what controls how close to the upwind edge of the box the hammerhead can be.

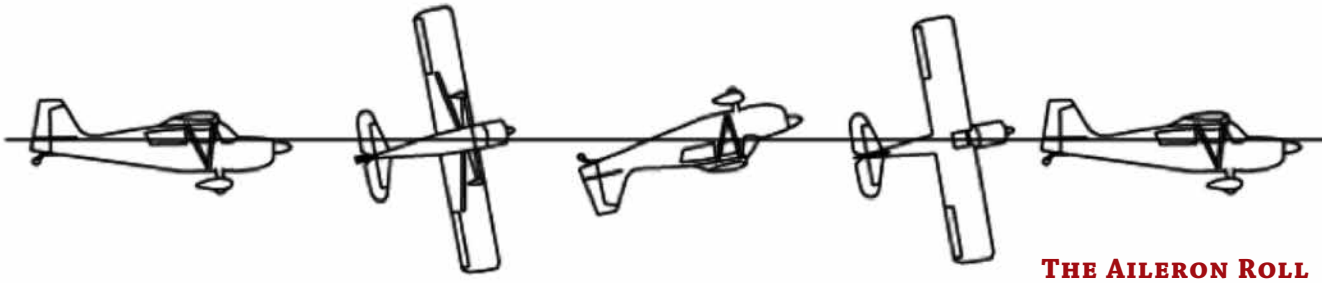
The above requirement is why the spin is an X-axis corrector. You can drive as needed after the Immelmann to put the spin where you need it. Put Maneuver No. 2 against the upwind edge of the box and get into the Immelmann quickly. That way a lot of slow-motion driving won't be required to put the spin where it needs to be.

Placement of Maneuver No. 6 drives the placement of all the maneuvers after it as well. What you now want to do is put Maneuver No. 8, the half-Cuban-eight, against the upwind edge of the box. If you do that, you'll have enough room to gain the speed needed for the last two maneuvers.

Lastly, as I've said before, the Sportsman pilot must mentally prepare him- or herself to "take the out" or take a break during a sequence. By this I mean that it is better mathematically to take a break, with its interruption penalty, or take the "out" penalty, than it is to fly a truncated maneuver that scores badly. More importantly, the flying of a chopped-up maneuver by new (and not so new) pilots, in an attempt to stay in bounds, is what frequently causes unsafe flying. Beware of this; take the "out," or take a break. Your flying will not only be safer, you will also score higher.

MANEUVERS

Box Entry—Yes, the box entry and the wing-wags are a maneuver. Call it maneuver 1A, and it must be practiced like any other. The first impression you are giving to the flawed human judges is the entry and the wing-wags, so come in fast, loud, strong, and snappy! Announce to



The Aileron Roll

the world that you are here to fly and here to win!

Make your wing-wags at least 45-degrees of bank, with a pause between each wag. That takes time. Also, set up your box entry in such a way that your aircraft is exactly at the speed and altitude desired for the initial pull-up into the first printed maneuver, or maneuver 1B. That takes some practice.

The Pull-Pull-Pull Humpty—The rule book says that the length of the lines in a humpty bump do not need to be equal. The rule book also says ". . . the radii of the first and last partial loops (meaning the partial loops at the entry and exit) must be equal. However, the half-loop in the middle of the figure can be of a *different radius*. These half-loops must still have a constant radius from the time they depart the vertical . . . line. This requires a change in *angular velocity* during the half-loop.

Those last two sentences illuminate the main problem of flying the humpty bump. The half-loop in the middle of the maneuver must be a perfect half-circle, and the half-loop must be completed *directly across from* the point where it began. If the half-loop finishes after, or lower, than that beginning point, it is called "finishing late," which is a downgrade.

In the first part of the half-loop your speed is slow as you are still going uphill. As a result the pitch rate, or speed of pitch change, is low and you must fly a widened arc across the top. In the second part of the half-loop you're going downhill and the airspeed is increasing, so the pitch rate must be increased with it to continue to draw a constant radius and to avoid finishing late.

As you pull on the stick faster and faster, the gyroscopic forces of the propeller induce a right yaw force. The yaw then induces a right roll. There won't be much yaw initially when the pitch rate is low. When on the downside of the half-loop with an American engine, more and more *left rudder* will be required on an *inside* half-loop as the pilot pulls faster and faster on the stick.

The Aileron Roll—Let's talk about all the aileron rolls in one place because its elements and techniques apply to the 1/2 rolls in maneuvers 2, 3, 6, and 8, as well as the 2-point roll in Maneuver 10. Competition aileron rolls, which are really slow rolls in technique, are one of the harder things to teach in the basic aerobatics course. You must not pitch first before initiating the roll.

Pilots must maintain a straight path before, during, and after the roll. The straight path of the aircraft's CG "dot" is the judging standard. Sinking during the roll is quite common, especially in the inverted and knife-edge portions of the roll. Sinking means the pilot didn't use enough top rudder in the knife-edges, or enough push when inverted.

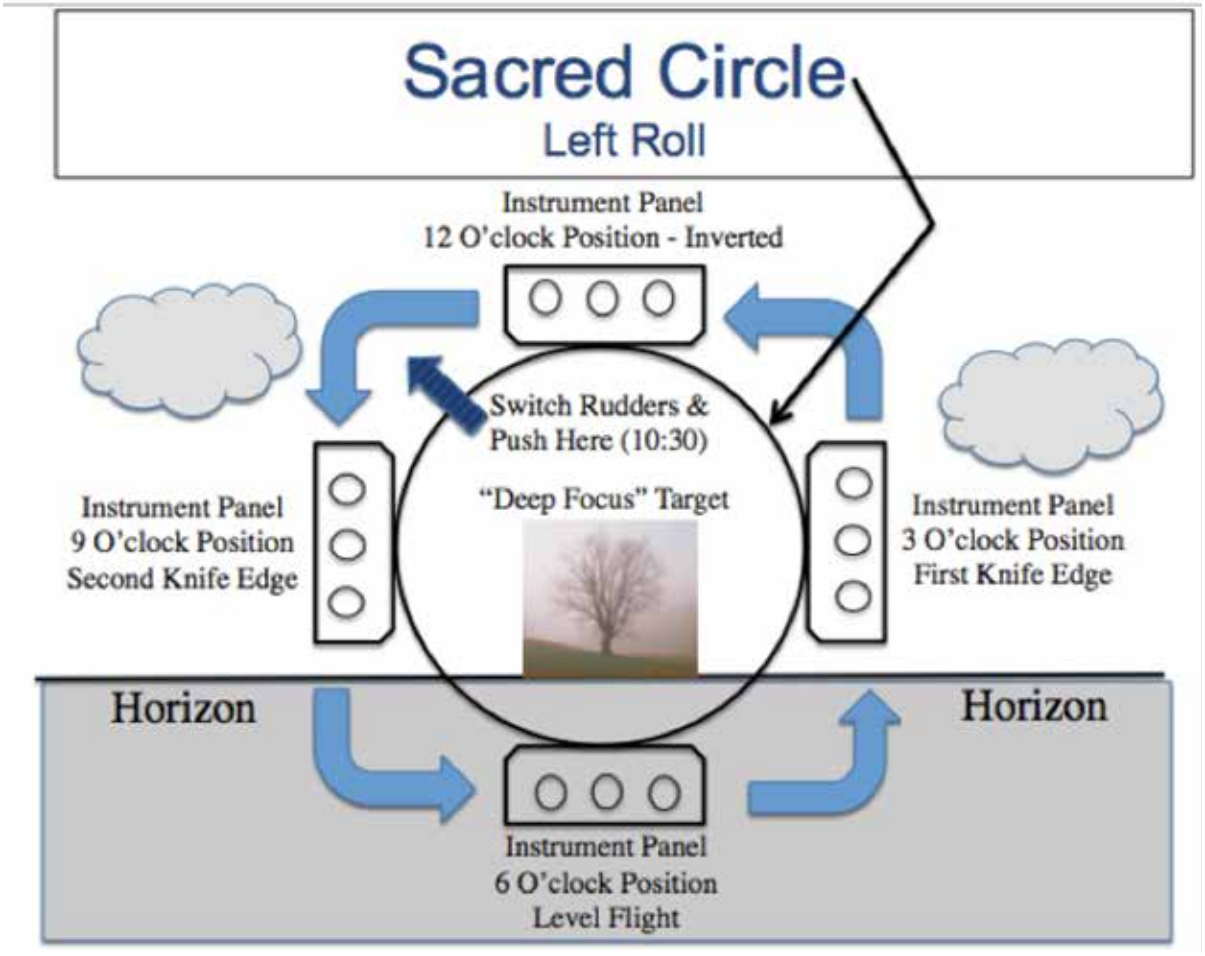
You see in the illustration above the attitudes needed to fly a straight line when inverted or when in knife-edge flight, especially in a slow, low-horsepower airplane. Another problem is not maintaining a constant roll rate. Lastly, people usually end up off heading to the right in a left roll.

The keys to a good competition aileron roll (slow roll) are picking a spot on the horizon, and then drawing British Champion Alan Cassidy's "sacred circle" with the tip of the nose around that spot, maintaining John Morrissey's deep focus throughout.

In earlier *Sport Aerobatics* articles Morrissey has said, "If pilots were having any difficulty with their rolls during the years I was team trainer, all I asked them to do was to remember their 'deep focus.' Without fail, that small reminder immediately cleared up any problem they were having with their rolls."

If we consider a left roll, the tip of the nose starts at the 6 o'clock position on the sacred circle, rotates counterclockwise up to 3 o'clock for the first knife-edge, continues up to 12 o'clock when inverted, down to 9 o'clock for the second knife-edge, then back to 6 o'clock. The controls must be manipulated in such a way to fly that sacred circle with the tip of the nose around that point, or target, on the horizon.

Airplanes with wings mounted



at a high angle of incidence, like the Decathlon or Citabria, need a higher nose attitude when inverted at the 12 o'clock position on the sacred circle. That makes the 12 o'clock position tall, turning the sacred circle into the sacred egg! To find the required 12 o'clock attitude the pilot must first fly inverted at the expected speeds and see how high the nose has to be above the horizon *while holding an altitude*.

When rolling counterclockwise past 3 o'clock on the sacred circle, on the way to 12 o'clock, enough push must be added to smoothly get the nose up to the correct inverted attitude. This will keep you from sinking as you transition from knife-edge to inverted. Blend this push in. Don't try to put the push in all at once at 12 o'clock or you may get an inverted mush or stall, especially in the Citabria.

Enough knife-edge practice must be flown to determine how much top rudder is needed to maintain altitude at the expected speeds. As you see in the diagrams above, the nose will be above the horizon in knife-edge.

A good trick taught to me by Emerson Stewart here in Ohio was to not switch the rudders (when switching to the "other" top rudder) when passing through 12 o'clock, but to wait until about the 10:30 o'clock position.

Additionally, as it says in Alan Cassidy's book *Better Aerobatics,* "a little push toward your feet about the same time as the feet are switched on the rudders (10:30) will also keep the nose pointed in the right direction as the rolling motion continues, rounding out the second half of the Sacred Circle." *This gentle push will fix the problem of ending off heading to the right all the time.*

Also, once the rudder pedals are switched, the roll rate will increase, which is a downgrade. Ease off the aileron deflection a bit when the rudder pedals are switched so the roll rate stays the same.

Former IAC President Rob Dorsey used to say repeatedly in his Stick and Rudder columns that you could tell who the new people were by the fact that they pulled the throttle to idle on the downlines and that they rushed their point rolls. In Maneuver 10 the point must look distinct and crisp. There *must* be a pause at the point that the judges can see.

One and One-Quarter Turn Spin—There are a million techniques out there to entering the spin and getting out on heading, most of them airplane specific. I will talk, instead, about what the

judges must see.

Again, to quote the good book, "When the aircraft stalls, the aircraft must simultaneously move around all three flight axes: (1) the nose will pitch toward the ground; (2) the nose will yaw in the direction of spin; (3) the wingtip will drop in the direction of the spin. Failure to achieve simultaneous motion about all three axes will be downgraded 1 point per 5 degrees of deviation on EACH axes."

Four things must be kept in mind for spins. First, don't settle on the entry line. A slight climb is okay. I watch my altimeter as I am slowing down toward the beginning of the spin departure. The second thing is the entry criteria, which was covered above.

Third, the spin exit must be practiced enough so that a finish on heading is reliable, and the pilot must maintain orientation throughout.

Fourth, get reliable ground coaching to make sure your downlines are *straight* down. Setting the trim before the sequence begins (and leaving it there throughout) at 5-10 knots above looping speed will help in this area. Holding a good downline is a perception thing, which is why you need ground coaching.

A lot of new people tend to push too much going downhill, getting "negative," or over on their backs. When your headset is flying up off your head, you may be pushing too much.

Since the spin is 1-1/4 the aircraft will exit the spin with a low wingtip. The spin must be stopped on heading, but as the downline is being established, the rudders must be used to make sure neither wingtip is low.

Lastly, the second you finish the spin and begin the downline, hammer the power! You need to feed a lot of energy into the next maneuver. If you have power on, you will gain speed quicker while losing less altitude (believe it or not!) and your elevator will work better for the pull-out.

The Hammerhead—The hammerhead is fun to do. It is also a maneuver that can induce an inverted spin if mishandled. The important points to discuss are the upline and the rotation.

First, the more vertical the upline is the better the rotation is. Once the vertical line has been set the stick cannot be frozen in position. The Decathlon, for instance, will slowly creep on its back (negative) as it goes uphill. The stick must be moved in pitch (head-to-foot) as necessary to maintain a perfect vertical attitude until the time of the pivot, or "kick," as some call it.

In this discussion we're in a left hammerhead with an American, or a clockwise turning, engine. The

engine at full power will torque the aircraft as it slows while going uphill. This will cause the aircraft to roll left, which is a downgrade. Put in right aileron as necessary to prevent any rolling on the upline.

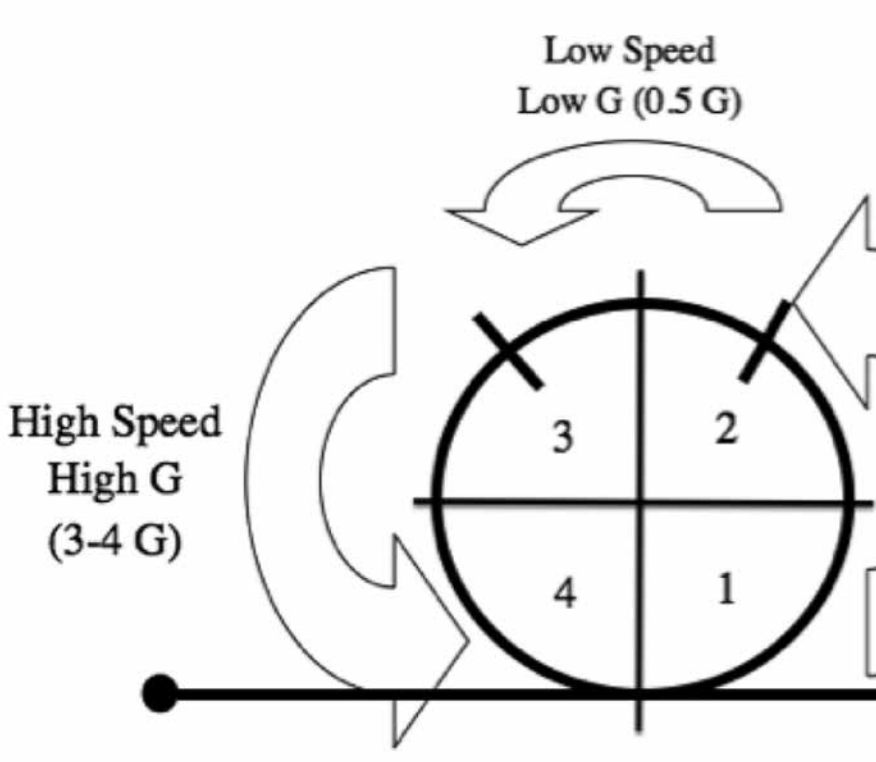
The kick, or pivot, is really not a kick, but a rapid and smooth push of the rudder to the stop, followed a split-second later by opposite aileron and forward stick. These movements are not to be done simultaneously, but sequentially. The aircraft type will determine the timing.

The rudder and elevator are effective immediately because they are in the propeller's energized slipstream. The aileron only becomes effective once the wingtip is moving in yaw and has some relative wind over it. Enough aileron must be added so that the aircraft yaws "in plane" with no rolling motion present. Any roll is a downgrade.

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

EMT instructor Rich Stowell taught me a neat visual trick that helps the pilot use the correct amount of forward stick. It is natural for the eye to want to follow the wingtip or sight gauge down across the ground as the pivot begins, but you must resist it. Instead, keep the eyes on that spot on the horizon where the wingtip or sight gauge was, and let the wingtip or sight gauge drop away out of sight. Then, apply just enough forward stick to put the tip of the nose through the same spot on the horizon the wingtip or sight gauge just vacated. Once the nose is on the horizon you can look elsewhere for establishing a downline.

When the nose reaches straight down, just neutralizing the rudder pedals will bring about a pendulum effect, which is a downgrade. To avoid this, put in full opposite (right) rudder when about 30 degrees away from straight down, then quickly go to neutral. That will stop the nose quite smartly, with it pointing straight down. Once the rotation stops you don't need as much forward stick, so ease off. Avoid pushing negative on the downline.



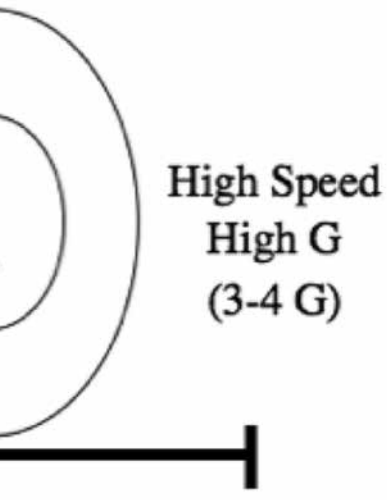
The Loop—We fly the loop in three parts, but we must analyze it, and judge it, in quarters. Quarter No. 1 is free and sets the standard. Whatever radius is drawn during the initial pullup in Quarter No. 1 must be recreated in quarters 2, 3, and 4. Quarters 2 and 3 are the hardest to draw over the top of the loop as the airplane's energy state is at its lowest, with 3 being the downgrade zone.

The partial loops in maneuvers 3, 6, and 8 must also follow this model. Maneuver 6 starts in the middle of Quarter No. 2 and continues through quarters 3 and 4. Make all the quarters, or parts of quarters, have the same radius.

The first key, especially in a low-performance airplane, is to make Quarter No. 1 small. Keep Quarter No. 1 small enough that you can duplicate it three more times. You don't have the horsepower to drive around a bigger loop. It is very important to pull enough *g* in the first quarter (at least 3 to 4*g* for you Decathlon/Citabria drivers) along with the proper entry speed, or you won't have enough energy left over to make quarters 2 and 3 look good.

The third quarter is where the pilot must fly out to round out this quarter so it is equal to Quarter No. 1. This quarter, due to its low energy, must be rounded out with a smooth, tiny, gentle push, and only ground coaching can tell you when and how much. As a starting point, put the gentle push in (smoothly) before you hit the middle of Quarter No. 3. The middle is too late. Also, if you don't have the energy, the push here won't help.

As you are finishing the loop, pull just a little less *g* at end of the fourth quarter than you did in the first. The aircraft is going a little slower in the fourth quarter, and it is very common for most people to finish the loop high. This means the exit altitude was higher than the entry altitude, which is a downgrade. Watch your finish altitude at the end of your loops in practice if you don't have a ground coach.



Loops are hard to do well and usually suffer under the judges' pens. I highly recommend that every Sportsman pilot fly a Freestyle, even if he or she borrows it from someone else. And the first thing I do on my Freestyles is get rid of the loop! The loop is not required in the Freestyle.

The Wedge—First, Maneuver No. 2 is a Family 1 figure, which means that the three radii do not have to be the same size. With that being said, though, you can't just flop over the tops of these figures.

You must have enough energy to draw a constant radius across the top, even though that radius can be a lot smaller than the other two. Remember to fly that top radius, with the changes in angular velocity, just as we discussed in the middle half-loop in the humpty. Second, the lines within the figure do not have to be the same length.

45-Degree Lines—45-degree up- and downlines are hard to do without ground coaching. You are flying for flawed human judges. Remember, your job is not to fly perfectly. Your job is to present the illusion of flying perfectly.

So, how do you know if you are on a 45-degree upline? This will vary from airplane to airplane and from pilot to pilot. Everything depends on the pilot's eye position. Whatever sighting system is used, it is very important that the pilot be absolutely anal about seating position. Always use the same seat position and the same cushions so that the eye position, and its relation to the sighting system or airplane structure, is the same every flight.

Also, when it comes to 45-degree lines, most new people are shallow. Getting ground coaching would be best, but if you can't get it, being a little steep is better than being a little shallow.

When rolling on the 45-degree lines, just like in the level rolls, the aircraft CG dot must follow the same line throughout the roll. Again, the greatest problems are in maintaining that straight line in the inverted and knife-edge portions of the roll. See the aileron roll about this.

On the 45-degree downlines pick that spot on the ground for your deep focus and do your sacred circle around that point. On the 45-degree uplines I pick a spot in the sky ahead of me and roll around that.

As for centering the half-roll, until ground coaching helps you make a proper adjustment, Rob Dorsey would recommend to make the line before and the line after the roll equal in time. Judge perception will usually see equal time as an equal distance flown. It is not perfect, but it is a place to start. Later, with coaching, you will find that you'll need to spend a slightly longer time on the slower line than on the faster line to make them equal in *distance*. The timing difference is small, however, and is not as great as a 2-for-1 ratio.

270-Degree Aerobatic Turn—Most new people don't hold enough bank angle in aerobatic turns. The judging criteria require that the turn must be 60 degrees of bank minimum. Since you are flying for flawed humans, they better not think you are shallow.

There must also be an observable pause between the roll, the turn, and the rollout. Also, the roll in and the roll out must be at the same roll rate. The rookie mistake is to roll in fast and roll out slow.

FINAL THOUGHTS

The Sportsman category is unique in that the pilot can pick his or her level of participation. First of all, there is no Unknown.

How well you do is directly proportional to how much fuel goes through your fuel injectors. To compete with meager resources, a pilot might elect to fly the Known three times, which requires less practice time than flying the Known and a Freestyle.

If time and resources permit, however, I highly recommend flying a Freestyle sequence. Whether a pilot is staying in Sportsman forever or trying to move up, a Freestyle is challenging and fun. If a Freestyle is well-designed to show off your airplane's attributes (and to hide what it doesn't do well, like the loop!), it can earn you higher scores, as well as be a lot of fun.

Watch your redlines, watch your altitudes, wear your parachute, and have fun! IAC

Team USA needs your support at this year's WAC. Please visit: *http://www.unlimitedaerobaticsusa.com* and press the "Donate" button on the right hand side of the page to use PayPal. Alternatively, you may send a check (check needs to be noted "Unlimited Team Donation") in care of Trish Deimer-Steineke to:

IAC
3000 Poberezny Rd
Oshkosh, WI 54902

Thank you for your support!

EVAN PEERS OF AIRSPACE MEDIA

(LtoR) Brett Hunter, Goody Thomas, Ben Freelove, Tim Just, Rob Holland, Michael Galloway, Jeff Bourbon, Nikkolay Timofeev, Mark Nowosielski, Melissa Pemberton.

Galactic Achievements

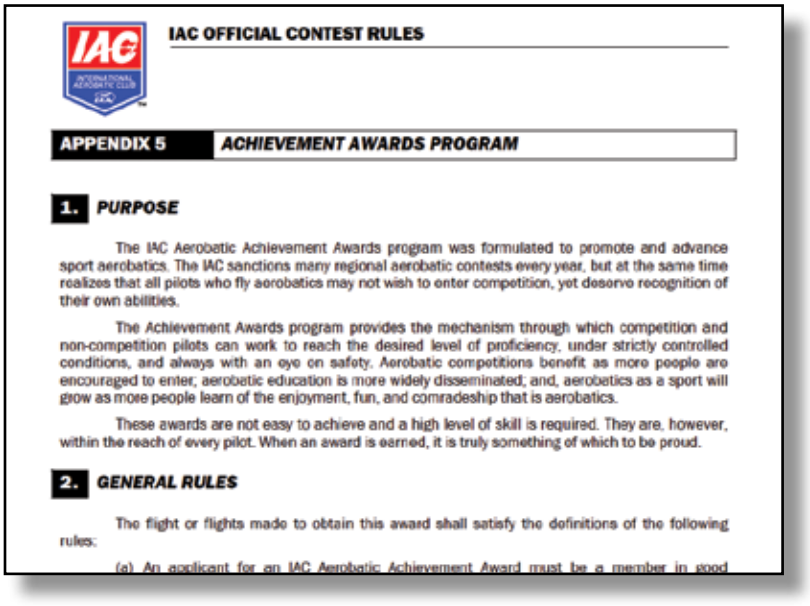
A presentation of the Stars Awards

BY DAVE WATSON
IAC 26557

PHOTOS BY EVAN PEERS OF AIRSPACE MEDIA

We've all heard the saying "'Tis better to give than to receive." Well, that simply isn't true in all cases. Or maybe, just maybe, it is

Caption for group shot with the Galactic Achievements:
From Left to Right Back row: Dave Watson, Andrew Slatkin, John Haag, Thomas Goetze, Doug Burr, Eric Lentz-Gathier, Jake Carter
Middle Row: Zinnia Kilkenny, Josh Horwich
Front Row: Brian Branscomb, JB Cockrell, Beth Stanton, Martin Price.



IAC OFFICIAL CONTEST RULES

APPENDIX 5 **ACHIEVEMENT AWARDS PROGRAM**

1. PURPOSE

The IAC Aerobatic Achievement Awards program was formulated to promote and advance sport aerobatics. The IAC sanctions many regional aerobatic contests every year, but at the same time realizes that all pilots who fly aerobatics may not wish to enter competition, yet deserve recognition of their own abilities.

The Achievement Awards program provides the mechanism through which competition and non-competition pilots can work to reach the desired level of proficiency, under strictly controlled conditions, and always with an eye on safety. Aerobatic competitions benefit as more people are encouraged to enter, aerobatic education is more widely disseminated, and, aerobatics as a sport will grow as more people learn of the enjoyment, fun, and comradeship that is aerobatics.

These awards are not easy to achieve and a high level of skill is required. They are, however, within the reach of every pilot. When an award is earned, it is truly something of which to be proud.

2. GENERAL RULES

The flight or flights made to obtain this award shall satisfy the definitions of the following rules:

(a) An applicant for an IAC Aerobatic Achievement Award must be a member in good

from a different perspective, but I have gotten ahead of myself.

The International Aerobatic Club (IAC) has what I feel is an underused awards program called the Achievement Awards. These awards come in two flavors—Smooth and Stars. Details can be obtained at *www.IAC.org/legacy/achievement-awards*.

Smooth Awards are achieved during practice or at "critique days." Any IAC member who flies each of several prescribed maneuvers before any active IAC judge at any time can earn them. For the Smooth Awards, a list of figures for each of the five (power and glider) categories is described in the IAC rule book. The pilot must receive a score of 5.0 or better on each of the figures to achieve the Smooth Achievement Award for that category. The figures can be flown in any order over any number of days before numerous judges with any number of aircraft, etc. You simply print out the award application and have your judge sign the form for each figure that you flew to that standard. Once you complete the list of figures, you send in the form and the IAC will recognize you by putting you on the list of all the others who have achieved this award (that list is on the IAC website). They will also send you a nice certificate that you can frame and hang in your hangar or over your headboard. In addition, you may purchase decals, pins, and patches. The judge typically must be on the ground, for example at a chapter critique day, but the rule book does have an exemption for your safety pilot/judge to be able to judge the figures from your plane if he or she meets specific criteria. Figures flown during contest flying may NOT be used to satisfy the Smooth achievement criteria. However, a good time to work on these figures is on a practice day at a contest when judges on the ground should be readily available to critique and score you.

Author Dave Watson prepared and gave a power point presentation to "an assembly of brilliant, beautiful and distinguished persons."

Stars Achievement Awards are earned if any pilot achieves a score of 5.0 or better from every judge on every figure flown at a contest. If there are four or more scoring judges, then each figure may have one score less than 5.0 and the pilot will still qualify. You do not have to sign up to qualify. At the end of the contest if your scores meet the criteria, you have achieved the award. Also, at a contest, you may have heard that a particular pilot is "flying for the patch." That means the pilot is not actually competing against the other competitors in that category for trophies, but he or she is flying to attempt to earn the Stars Achievement Award for that particular category. Any competitor, in addition to his or her competition flights, may also "fly for the patch" in any category (or categories) BELOW the one in which the pilot is registered to compete. Many contests charge an additional registration fee to cover the "box time." IAC rules require the chief judge (CJ) at that contest to sign the Stars application forms to approve the award.

Dave Watson (left) hands an award to Thomas Goetze.

The reason I think these awards are underused is that both awards are fully self-administered. You must be both the giver and the receiver to obtain these awards. Typically, the pilot/recipient has to fill out forms, get signatures, and submit them to the IAC to receive these awards. I would play *Pomp and Circumstance* each time I opened the envelope when my Stars Awards would arrive from

Jake Carter receives his Primary Stars – achieved in a Super Decathlon.

the IAC—the cheering recognition of my peers resonating in my mind but somewhat missing in my imaginary ceremony. So a few months ago, with the contest season winding down, I awoke one morning with the idea of secretly ordering the Stars Awards for the friends of mine who have been flying my Super Decathlon. I found on the IAC website that all of the results for almost every contest back to 2008 are in the database (*https://IACcdb.iac.org*). So I managed my way around the intuitive database, and I found when and where my "team members" had achieved their awards. The program actually puts a nice little star next to the names of anyone who achieved the Stars Achievement Award at each contest, so you don't have to sift through piles of data to determine who has achieved it. Mind you, the program determines if it was achieved; it does not fill out the form and send the award! So, in a matter of an hour or so, I found the data and filled out the forms for the Stars Awards that had been achieved by the six users of my plane (*The Evil Empire*) this year. I called and e-mailed contest directors and CJs to determine who the chief judges were, and I got their signatures on the forms. This took about a month, but in the end I got them all signed off, and I then sent these off to Lorrie and Trish at the IAC and got those awards going. In talking with them, I persuaded, and they agreed, that the CJ signature was an outdated requirement since the scoring program now automatically determines if the requirements have been met. So they agreed to waive this requirement in the future. With that obstacle out of the way, I expanded my quest to present these achievements to everyone in my chapter. After all, I am VP of the chapter, and I should not show favoritism—right?

Andrew Slatkin receives his Advanced Stars – achieved just three weeks prior in a stock 180 HP 2-place Steen Skybolt!

My motivation for this project originally stemmed from me envisioning a copy of each of these certificates hanging in my hangar showing the progress through the categories of my team members, and then it shifted to a sense that these awards, *when given publicly*, could be a great tool for motivation and maintaining membership. So several hours later, I had dredged the IAC data for each of our chapter's competing mem-

bers, and I found more than 30 Stars Awards for more than 25 pilots who had never indulged in this ritual of self-appreciation! I filled in the forms with just pilot names and contest dates, and Lorrie and Trish processed all the rest of the forms and sent to me all the certificates, decals, and pins I ordered for the recipients.

At our October chapter meeting I had a top secret item on the agenda named Galactic Achievements, and I had rumored that Richard Branson would be our guest speaker . . . just to get as many pilots to attend as possible. In preparing my PowerPoint for the presentation, I looked up Galactic in the dictionary and got two very appropriate definitions: 1) "Any of numerous large-scale aggregates of stars" (this obviously was the "hint" in my presentation title). And I found a second definition that is even more appropriate to the award: 2) "An assembly of brilliant, beautiful, or distinguished persons or things."

Following the success of giving these Stars Awards, several IAC 38 members participated at a Glider Acrofest in Williams, California, in December. I "judged" and critiqued as four pilots earned seven Smooth Awards. One pilot renewed his IAC membership, and we attracted another new member—evidence that these awards can be used as a powerful membership incentive. The response I got from our membership for giving these awards eclipsed my expectations. I hope other chapters follow this example and will use the Achievement Awards in a "giving way" to enhance the significance of the awards to the recipients. IAC

Note

For the past several years, the actual patch has not been available for most categories; only pins and decals were available. I am pleased to report that as of December 2014, the patches for all categories are once again available. If you have previously received any of these awards and yet were disappointed not to be able to anoint your flight jacket with the patch, you can now order it from the IAC.

Also of note, the IAC just announced that beginning immediately and throughout 2015, any first-time applicants for Primary or Sportsman Stars or Smooth Awards will receive their first award patch free.

Many thanks to Evan Peers of AirSpace Media for taking the photos of our chapter meetings this year, including these photos of the recipients.

Seat Belt Dummy

Managing tandem seat belts

BY ED VERNER
IAC 433617

In my tandem two-place Skybolt, in the passenger/front seat I have a five-point Christen Eagle seat belt and a Hooker ratcheted alternate lap belt. It is a good and comfortable arrangement that works well. Yet, care must be taken to secure these belts when unoccupied, for if they foul on anything while aloft, I cannot reach them from the solo rear seat while in flight. For years now, each time I transitioned the belts for readiness from either "empty" or "occupied," I endured about 20 minutes of contorting my body headfirst into the front cockpit to deal with them. This wrangling upside down is not the best prescription for a happy back or belly right before an aerobatic flight. When the seat was to be empty, I had to tension the belts to make sure they would not dislodge into any control stick or throttle linkage, and secure them with a line or bungee or both to prevent them from moving. Conversely, when rigging for a passenger I had to loosen them like a spider releasing a captured fly to accommodate the average person.

I'm not the first person to encounter this issue, and upon asking around I heard of people using cushions, pillows, or even a large teddy bear to substitute a foamy girth in place of a passenger in holding their belts up and out a bit. But I just didn't trust a pillow or square cushion to remain in place if I really go after any maneuvers with gusto. So too, my having a stuffed animal as a surrogate during aerobatics somehow seemed downright

Without the dummy, aerobatic seat belts look like a tangled web.

Ed enlisted his mother-in-law to sew the old clothes together for his seat belt dummy.

wrong for me. So what to do? Enter "Earl," front and center.

I constructed a seat belt dummy using an old durable pair of jeans and a good quality button-up long-sleeve shirt—for me it was a shirt too large and a pair of jeans too small. It certainly was helpful to have a mother-in-law who can sew and also to find in my father-in-law's garage an old foam mattress just a few days shy of being thrown out. Thus inspired in part by available scrap parts and slave labor, I began to think out design issues. I wanted there to be stub legs that would allow for the crotch strap to keep Earl centered in the seat, yet

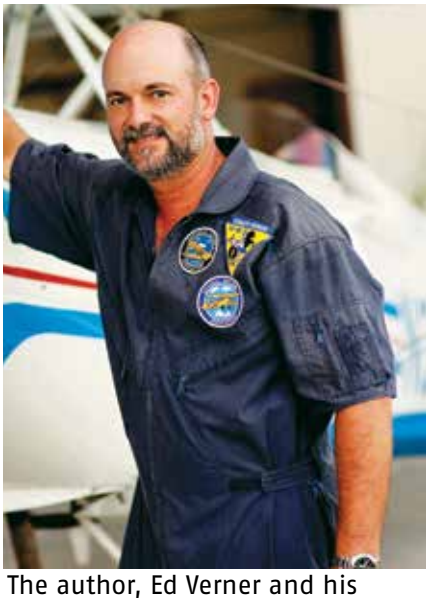
Here's what the dummy looks like before being stuffed with foam.

be too short to reach and possibly foul the rudder cables. Likewise by cutting down the sleeves and giving Earl only 10-inch arms, he was to have enough beam to use the shoulder straps without their sliding off, yet have no long arms that might otherwise either flap outside of the cockpit into the airstream or entangle in the throttle linkage. The final touch was how the seamstress sewed in a liner for the neck to accommodate how Earl would have no head. (I didn't want him to block my view forward.) The end result is basically a general appearance of a decapitated dummy with a nice wardrobe.

All told, I estimate Earl weighs no more than a few pounds. By doubling up the mattress foam in a few places, he has enough stiffness to give resistance to the belts, and yet not so much at the waist to prevent his bending into a chair. At first he was simply "Airman Earl," but after enduring positive and negative *g* maneuvers of gentle and robust character without shifting or vomiting, and faithfully flying several missions of all kinds with me, I have promoted him to the rank of captain. And my belt transition time to remove Capt. Earl in favor of a live specimen now only takes a moment or two.

An unexpected bonus feature is how Capt. Earl sparks a positive comment or is a conversation-starter with any Young Eagles or acro-curious pilot passengers. I try to do my part and give occasional free flights to those interested in an open-cockpit biplane with a few bumps in it. However, most wannabe passengers witnessing my removing tie-down lines or cushions and un-wadding their seat belts were not as comforted or confident as they sometimes are now when they see my usual passenger, Capt. Earl. Just explaining to them how his purpose is to secure their belts in their "proper" shape until he can cough up his seat for them on their turn sets a tone of wit and smiles that subtly changes the dynamic of a preflight brief. Shoulders relax and jaw muscles unclench just a tad, and that can be worth a lot toward a first aerobatic flight being positive. If Capt. Earl can do it, surely they can.

What started out as my trying to reduce the duration of gymnastic gut-wrenching wrangling with my belts has become both a time-saver and a mascot of sorts. And if you have a tandem two-holer and a closet with some nostalgic clothes to sacrifice, make yourself a dummy. ***IAC***


The author, Ed Verner and his Skybolt.

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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**. *If your chapter is hosting a contest, be sure to let the world know by posting your event on the IAC website.*

Snowbird Acro Classic (Southeast)
Friday, February 27 – Saturday, February 28, 2015
Practice/Registration: Wed, February 25—Fri, February 27
Rain/Weather: Sunday, March 1
Glider Categories: Sportsman through Unlimited
Power: Primary through Unlimited
Location: Marion County Airport (X35), Dunnellon, FL
Region: Southeast
Contest Director: Chris Rudd
Contact Information: 850-766-3756
E-Mail: *invertedribboncut@gmail.com*

Borrego Hammer Heads Round Up (Southwest)
Thursday, March 26 – Saturday, March 28, 2015
Practice/Registration: Thursday, March 26
Rain/Weather: Friday, March 27
Power: Primary through Unlimited
Location: Borrego Springs Airport (L08): Borrego Springs
Region: Southwest
Contest Director: Bill Hill
Contact Information: 949-637-0483
E-Mail: *hillgroup@cox.net*
Website: *http://www.iac36.org/*

Ben Lowell Aerial Confrontation (South Central)
Monday, April 27 – Tuesday, April 28, 2015
Practice/Registration: Sunday, April 26
Glider Categories: Sportsman through Unlimited
Power: Primary through Unlimited
Location: USAF Academy Field (AFF): Colorado Springs, CO
Region: South Central
Contest Director: Billy Jacks
E-Mail: *william.jacks.2@us.af.mil*
Website: *www.iac12.org*

Sebring Spring #71 (Southeast)
Friday, May 1 – Sunday, May 3, 2015
Practice/Registration: Saturday, April 25 – Thursday, April 30
Glider Categories: Sportsman through Unlimited
Power: Primary through Unlimited
Location: Sebring Regional (SEF): Sebring, FL
Region: Southeast
Contest Director: Travis Gier

ACE's High Spring Opener (South Central)
Saturday, May 9 – Saturday, May 9, 2015
Practice/Registration: Friday, May 8
Rain/Weather: Sunday, May 10
Power Categories: Primary Sportsman
Location: Newton City County Airport (EWK): Newton, KS
Region: South Central
Contest Director: Mark Wood
Contact Information: 602-361-3504
E-Mail: *Mark@dreamcatcheraviation.com*

Coalinga Western Showdown (Southwest)
Friday, May 29 – Saturday, May 30, 2015
Practice/Registration: Thursday, May 28
Power: Primary through Unlimited
Location: New Coalinga Municipal Airport (C80): Coalinga, CA
Region: Southwest
Contest Director: Martin Price
Contact Information: 510-579-3407
E-Mail: *martin@pull.gs*
Website: *http://www.iac38.org*

Hoosier Hoedown (Mid-America)
Saturday, May 30 – Sunday, May 31, 2015
Practice/Registration: Friday, May 29
Power: Primary through Unlimited
Location: Kokomo Municipal Airport (OKK): Kokomo, Indiana
Region: Mid-America
Contest Director: Mike Wild
Contact Information: 765-860-3231
E-Mail: *mike.wild@hotmail.com*

IAC East Coast Championship (Southeast)
Thursday, June 4 – Saturday, June 6, 2015
Practice/Registration: Wednesday, June 3
Rain/Weather: Sunday, June 7
Power: Primary through Unlimited
Location: Richard B. Russell Regional (RMG): Rome , GA
Region: Southeast
Contest Director: Ken Lumpkin
Contact Information: 706-506-0550
E-Mail: *capitoline@bellsouth.net*

Lone Star Aerobatic Championship (South Central)
Friday, June 12 – Saturday, June 13, 2015
Practice/Registration: Thursday, June 11
Rain/Weather: Sunday, June 14
Power: Primary through Unlimited
Location: Mid-Way Regional Airport (JWY): Midlothian, TX
Region: South Central
Contest Director: Carol Walke
Primary Phone: 214-948-0440
E-Mail: *Walkercl@aol.com*
Website: *http://iac24.org/*

Ohio Aerobatic Open (Mid-America)
Friday, June 19 – Saturday, June 20, 2015
Practice/Registration: Thursday, June 18
Rain/Weather: Sunday, June 21
Power: Primary through Unlimited
Location: Bellefontaine Regional (EDJ): Bellefontaine, OH
Region: Mid-America
Contest Director: Gordon Penner
Contact Information: 513-520-6065
E-Mail: *penner.gk@gmail.com*
Website: *iac34.eaachapter.org*

IAC West Open Championship (South Central)
Saturday, June 27 – Sunday, June 28, 2015
Practice/Registration: Thursday, June 25 – Friday, June 26
Glider Categories: Sportsman through Unlimited
Power: Primary through Unlimited
Location: Seward Municipal Airport (SWT): Nebraska
Region: South Central
Contest Director: Ed Bowes
Contact Information: 402.770.5966
E-Mail: *edbowes@windstream.net*
Website: *IAC80.org*

Best Box in Texas (South Central)
Thursday, July 9 – Sunday, July 12, 2015
Practice/Registration: Thursday, July 9
Rain/Weather: Sunday, July 12
Power: Primary through Unlimited
Location: Jackson County Airport (26R): Edna, TX
Region: South Central
Contest Director: Doug Jenkins
Contact Information: 210-485-8025
E-Mail: *bagsf15@yahoo.com*
Website: *http://www.iac127.eaachapter.org/*

Michigan Aerobatic Open (Mid-America)
Saturday, July 11 – Sunday, July 12, 2015
Practice/Registration: Friday, July 10
Power: Primary through Unlimited
Location: James Clements (3cm): Bay City, Michigan
Region: Mid-America
Contest Director: Brian Roodvoets
Contact Information: 810-667-0642
E-Mail: *redfoot@chartermi.net*
Website: *http://www.iac88.eaachapter.org/*

Green Mountain Aerobatics Contest (GMAC) (Northeast)
Friday, July 17 – Sunday, July 19, 2015
Practice/Registration: Thursday, July 16 – Friday, July 17
Glider Categories: Sportsman through Unlimited
Power: Primary through Unlimited
Location: Hartness State Airport (VSF): Springfield, VT
Region: Northeast
Contest Director: Bill Gordon
Contact Information: 802 585 0366
E-Mail: *wsgordon@earthlink.net*
Website: *www.iac35.aerobaticsweb.org*

Beaver State Regional (Northwest)
Friday, August 14 – Saturday, August 15, 2015
Practice/Registration: Wednesday, August 12 – Thursday, August 13
Power: Primary through Unlimited
Location: Pendletion Regional Airport (PDT): Pendleton, OR
Region: Northwest
Contest Director: Christopher Branson
Contact Information: 5038037167
E-Mail: *christopher.branson@comcast.net*
Website: *http://www.iac77.eaachapter.org/*

Doug Yost Challenge (Mid-America)
Saturday, August 15 – Tuesday, August 16, 2016
Practice/Registration: Thurs, August 13 – Fri, August 14
Power: Primary through Unlimited
Location: Spencer Municipal Airport (SPW): Spencer, IA
Region: Mid-America
Contest Director: Justin HIckson (Temporary)
Contact Information: 651-338-3345
E-Mail: *jhisbatman@yahoo.com*
Website: *www.iac78.org*

2015 Canadian National Aerobatic Championship (Mid-America)
Saturday, August 15 – Sunday, August 16, 2015
Practice/Registration: Friday, August 14
Power: Primary through Unlimited
Location: Saugeen Municipal Airport (CYHS): Hanover, Ontario
Region: Mid-America
Contest Director: Phil Englishman
Contact Information: 519 377-3777
E-Mail: *mickeyd@wightman.ca*
Website: *http://aerobaticscanadachapter3.blogspot.ca*

The Bill Thomas U.S.-Canada Aerobatic Challenge (Northeast)
Saturday, August 22 – Sunday, August 23, 2015
Practice/Registration: Thursday, August 20 – Friday, August 21
Power: Primary through Unlimited
Location: Olean Municipal Airport (KOLE): Olean,New York
Region: Northeast
Contest Director: Pat Barrett
Primary Phone: 716-361-7888
E-Mail: *cbpbmb@aol.com*
Website: *IAC126.blogspot.com*

Harold Neumann Barnstormer (Mid-America)
Saturday, August 29 – Sunday, August 30, 2015
Practice/Registration: Fri, August 28 – Sat, August 29
Power: Primary through Unlimited
Location: New Century Aircenter (IXD): Olathe, KS
Region: Mid-America
Contest Director: John Wittenborn
Contact Information: 913-782-6442
E-Mail: *Chiller_52@yahoo.com*
Website: *www.iac15.org*

East Coast Aerobatic Contest (Northeast)
Friday, September 11 – Sunday, September 13, 2015
Practice/Registration: Thursday, September 10 – Friday, September 11
Power: Primary through Unlimited
Location: Warrenton Fauquier Airport (KHWY): Warrenton, VA
Region: Northeast
Contest Director: Krysta Paradis
Contact Information: 925-878-9830
E-Mail: *krysta.paradis@gmail.com*

U.S. National Aerobatic Championships (South Central)
Saturday, September 19 – Saturday, September 26, 2015
Glider Categories: Sportsman through Unlimited
Power: Primary through Unlimited
Location: North Texas Regional (GYI): Sherman – Denison TX
Region: South Central
Contest Director: Gary DeBaun
Contact Information: 612-810-6783
E-Mail: *B747Inst@aol.com*

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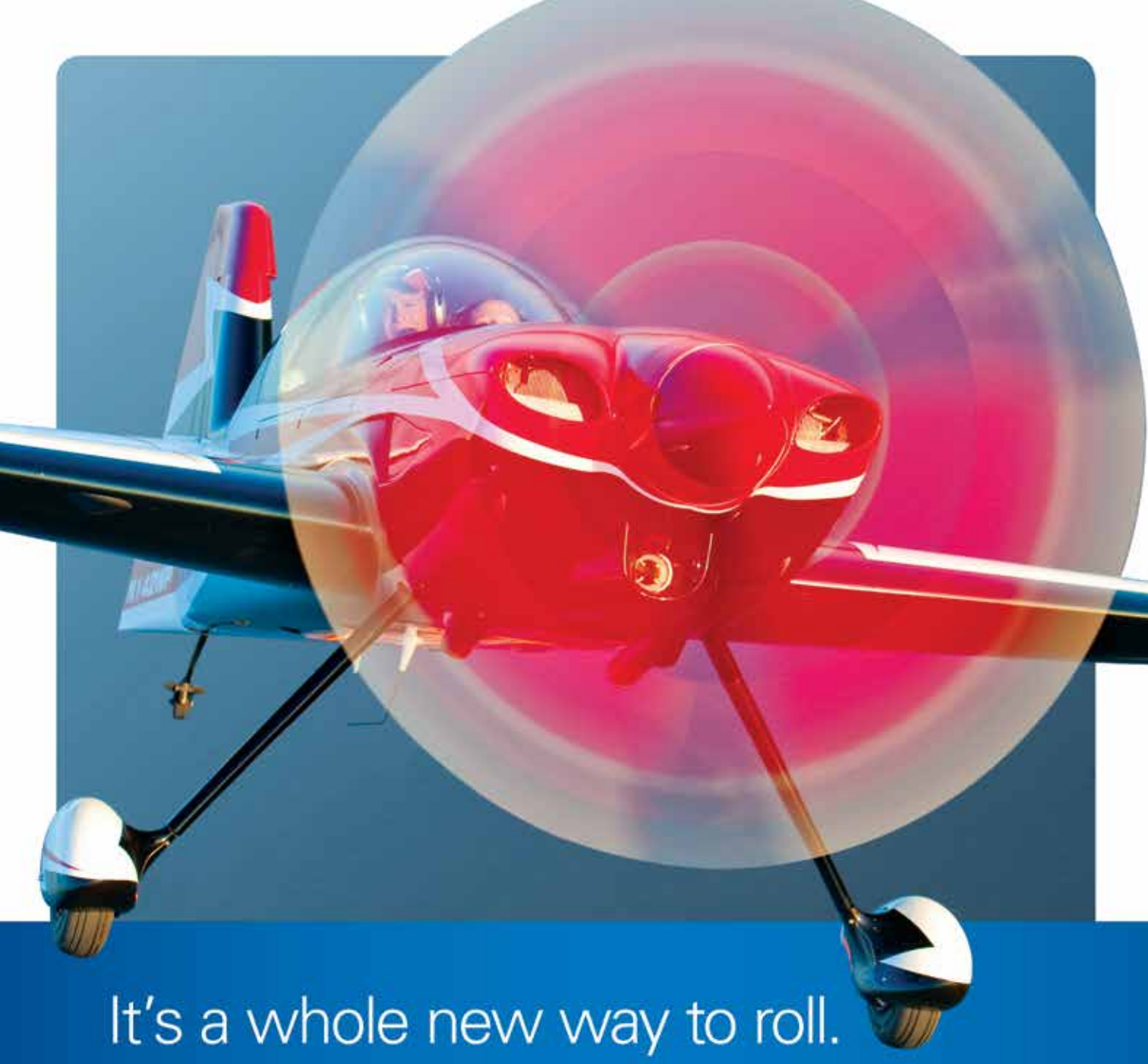

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