

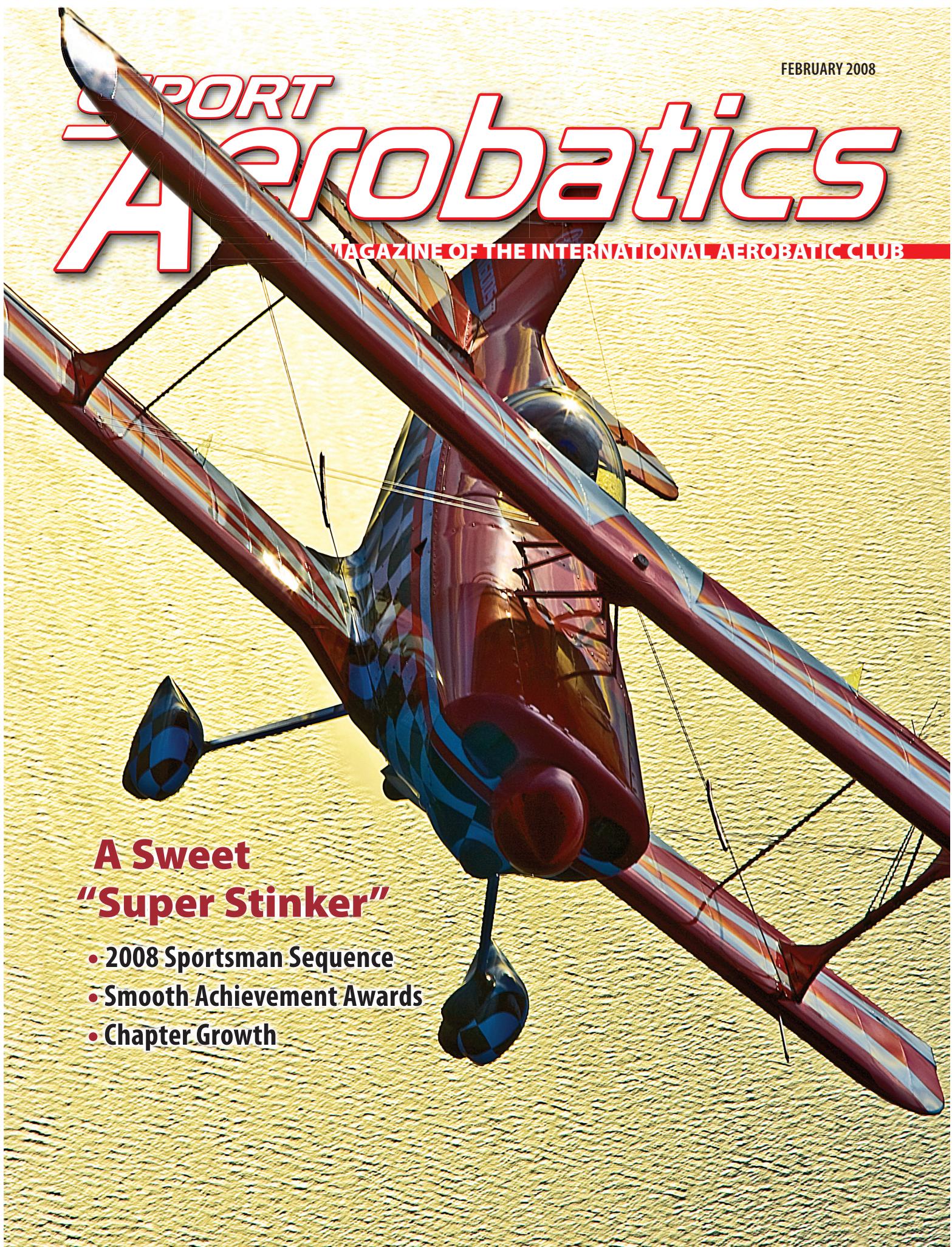
FEBRUARY 2008

SPORT Aerobatics

MAGAZINE OF THE INTERNATIONAL AEROBATIC CLUB

A Sweet “Super Stinker”

- 2008 Sportsman Sequence
- Smooth Achievement Awards
- Chapter Growth





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Dan Salcedo pilots one of aerobatic's best-kept secrets: The Pitts S-1-1. (Photo by Jim Koepnick)

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Judson Bartlett

LETTER from the EDITOR

by Scott Westover

Flying with purpose

In this issue of *Sport Aerobatics* you will find two different articles that will help you fly with a purpose. As aerobatic enthusiasts, we do not need an excuse to strap on a parachute and loop and roll our way across the sky. At the same time, structure and setting flight-specific goals are the best way to increase focus and the margin of safety. In other words, thinking of each flight as a building block forces more pilot preparation and builds skills faster than the "Hey, let's go fly!" approach. Now, before the e-mail deluge begins, I am the first to admit that a casual flight around the patch or spontaneously helping a passenger get in touch with his or her inner aerobat is time well spent. I just happen to believe that working toward a measurable goal helps to justify the investment in gas and insurance.

The introduction to the Smooth Achievement Awards by Rich Stowell, "Measuring Progress With the Primary Smooth Award," provides competitors and non-competitors alike with an opportunity to hone their flying skills and earn an achievement award by demonstrating competency in front of an IAC judge. This recognition program has recently been rejuvenated, and I look forward to hearing from IAC members who accept the challenge of earning smooth awards in their category. This program is the perfect opportunity for aerobatic pilots to challenge ourselves outside of the competition environment. It also provides an opportunity to get several pilots in your chapter together and to set a chapter goal for participation without adding another contest to the calendar.

Speaking of the contest calendar and with spring only a checkpoint or two

away, I would like to direct our members who are thinking about competing in Sportsman this year to the article by John Morrissey. John has been a coach and competitor for years, and took time to share his insights about finding success in IAC's largest category by penning "Flying the 2008 Sportsman Sequence." John offers his advice under the assumption that competitors have already mastered the maneuvers included in the 2008 Sportsman sequence. He focuses on those tips that deliver superior presentation to the judges and separate pilots by degrees of excellence. This is the kind of article that ends up tattered and stained with whatever dripped out of your airport diner burger...a sure sign of a good read.

The point of including both of these articles is to provide our members with options. For some of us, this will be a year of thinking inside the box as our goals will be achieved at competitions. For others, the goals are more personal and might be accomplished in front of a smaller audience, perhaps even an audience of one (I am still looking for that perfect landing, which I am told will present itself only when I am solo and no one else is at the airport). However, if we dare to broaden our audience just slightly, the smooth achievement program is ready to recognize your effort. Whichever situation best describes the flying in front of you this season, *Sport Aerobatics* wants to be a part of your flight planning. Keep letting us know what kind of material will be the most helpful, and we'll keep tracking down the experts that are more than willing to share their expertise and experience. I look forward to hearing from you. Fly safely! ☺

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

PRESIDENT'S PAGE

by Vicki Cruse • IAC 22968
E-mail: vcruse@earthlink.net



Vicki Cruse

Harnessing the Fear of Flying

Fear can be a confidence builder, and you are not alone

Since becoming National Champion in 2007 and having the story of how I got into aerobatics published, I've been contacted by a few members expressing that they too lack confidence in their flying. They have concluded that they are unable to participate in aerobatics at any level. While they understand the benefits aerobic training can provide, they are looking for inspiration to actually go do it.

*"Living fearlessly is not the same thing as never being afraid. It's good to be afraid occasionally.
Fear is a great teacher."*

– Michael Ignatieff

My story isn't that unusual. I received my private pilot certificate in 1993 after failing my checkride for being unable to slip (a skill overlooked by my instructor) and my inability to land as the examiner wished. Due to a lack of confidence and the inability to comfortably fit in most planes, I didn't fly again until 1997 when I completed an Emergency Maneuver Training (EMT) course. Truth is, my biggest fear was flying by myself. The EMT course

changed everything. Through the course I gained confidence in my ability to fly a 152 and an interest in aerobatics began to develop.

The two quotes on this page struck me as particularly applicable to the fear of flying and more directly to the fear of unusual attitudes. I believe that most of the fear of aerobatics, namely stalls and spins, is introduced in private pilot training by instructors who are not comfortable enough with their own training and knowledge to be able to convey information about these elements to their students without striking great fear into them. This does a great disservice to the entire pilot population.

Most instructors fear stalls and spins because they have not had adequate training in them. How can they teach something they have never fully experienced? It isn't necessarily their fault, but a fault in the system we have in place to develop flight instructors. My private pilot instructor fit that mold. This was how he was taught. In an article I wrote for the National Association of Flight Instructors (NAFI), I suggested the one thing an instructor could do that would benefit him and every student he teaches, would be to take an EMT or unusual attitude course.

Fear of flying and aerobatics, particularly stalls and spins, comes from many places and is

a topic steeped in myth. It is up to you to seek out information and learn the truth about these controlled maneuvers.

"Fearlessness may be a gift but perhaps more precious is the courage acquired through endeavor, courage that comes from cultivating the habit of refusing to let fear dictate one's actions..."

–Aung San Suu Kyi

Two of the members that contacted me will be taking an EMT course this year, one with Greg Koontz in Alabama and the other with Judy Phelps in California. Both members own airplanes, one a Baby Lakes and the other a 150 Aerobat, and want aerobatic training to gain confidence in their flying skills. These two pilots, along with many of you reading this column, should be commended for the decision to overcome fear in the name of becoming a safer pilot and gaining self-confidence. 

NEWSBRIEFS

Aerobatic Calendar Available

IAC 19 newsletter editor and webmaster Kent Misegades has produced a calendar displaying images from the 2007 Mason-Dixon Clash. Many of these images are from noted aviation photographer Daryl Jacobs. This is a professionally printed, 12-month calendar that includes dates for most major aerobatic events on the East Coast. The calendar is available to anyone, and all the proceeds benefit IAC 19. This calendar has been made possible through the generous sponsorship of the Campbell Oil & Gas Company of Elizabethtown, North Carolina. IAC 19 is grateful for the support of Brian Campbell, Extra 300L pilot and president of the Campbell Oil & Gas Company.



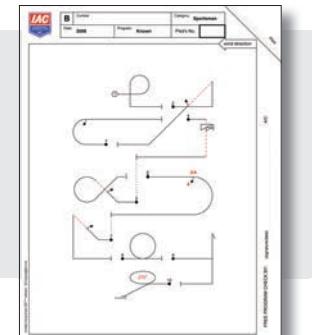
For all orders from within the United States (including Alaska and Hawaii) and Canada the cost is \$12 (US) per calendar. All other orders are \$15 (US) per calendar. To order a calendar, send cash or a check made out to Kent Misegades to:

Kent Misegades, 204 Parkmeadow Dr.
Cary, NC 27519 USA

When ordering, please include your name, shipping address, and quantity requested. Also please include a telephone number and e-mail address. For more information, contact Kent at 919-303-8230 or kmisegades@bellsouth.net.

2008 Known Program Online

The 2008 Known programs for Sportsman, Intermediate, Advanced, and Unlimited Power and Sportsman, Intermediate, and Unlimited Glider categories are now available in PDF and Visio files on the IAC members-only website. Log into <http://Members.IAC.org> and then go to the **2008 Approved Knowns** section.



New Propeller ADs Issued

AD 2007-26-09: Hartzell Propeller Compact Series The FAA is superseding an existing airworthiness directive (AD) for all Hartzell Propeller Inc. models ()HC-()()Y()-()() compact series, constant-speed or feathering propellers with Hartzell manufactured "Y" shank aluminum blades. That AD currently requires initial blade inspections, with no repetitive inspections; rework of all "Y" shank aluminum blades including cold rolling of the blade shank retention radius, blade replacement, and modification of pitch change mechanisms for certain propeller models; and changing the airplane operating limitations with specific models of propellers installed. This AD requires the same actions but clarifies certain areas of the compliance and updates a certain service bulletin (SB) reference to the most recent SB. This AD results from operators requesting clarification of certain portions of AD 2002-09-08. This AD became effective January 30, 2008, and applies to all propellers listed above and which may be found on, but not limited to, the following airplanes: Siai Marchetti, Pitts S-1T, and S-2A.

AD 2007-26-23: MT Propeller – Various Models

The FAA is superseding an existing airworthiness directive (AD) for certain MT-Propeller Entwicklung GmbH variable-pitch and

fixed-pitch propellers manufactured before 1995 that had not been overhauled since April 1994. That AD currently requires overhauling the propeller blades and performing initial and repetitive visual inspections of affected propeller blades. That AD also requires removing all propeller blades from service with damaged erosion sheath bonding or loose erosion sheaths and installing any missing or damaged polyurethane protective strips. This AD requires the same actions. This AD results from the need to clarify the population of affected propellers previously listed in AD 2006-05-05. This AD is issued to prevent erosion sheath separation leading to damage of the airplane. This AD became effective January 31, 2008.

This AD applies to MT-Propeller Entwicklung GmbH model MT, MTV-1, MTV-3, MTV-5, MTV-6, MTV-7, MTV-9, MTV-11, MTV-12, MTV-14, MTV-15, MTV-18, and MTV-21 propellers manufactured before 1995 that have not been overhauled since April 1994. These propellers may be installed on, but not limited to, EADS Socata Rallye; Extra EA-300; Sukhoi Su-26, Su-29, and SU-31; and Yakovlev Yak-52, Yak-54, and Yak-55.

Both of these ADs may be found at www.IAC.org/alerts.html under the heading FAA Airworthiness Directives. Here you may search by AD number.

Gone West: Vytas Lapenas



Vytas Lapenas was killed in a gyroplane accident in Lithuania on January 14, 2008. At the time of this printing few details were available about the crash. Vytas was the coach of the Spanish Aerobatic Team. He began flying at the age of 17, and at age 22 he became the

Lithuanian Aerobatic Champion. At 27 he became the Russian National Champion. In September 1989, he was involved in a crash in a Yak-55M, resulting in the loss of a leg and severe burns over half his body. After the accident he relearned how to fly, and in 1990, Ramon Alonso, a member of the Spanish team, asked Vytas to come to Spain to coach him. Eventually he would coach the entire team. In the following years Vytas returned to competition and air show flying. He also founded a flight school and continued instructing aerobatics and coaching pilots.

The Spanish team has established an e-mail address for anyone who would like to send condolences or memories about Vytas. The team will be collecting these and putting them into a book for Vytas' family. The address is graciasvytas@copatriangular.com.



Sonex Optional Pre-Assembled Spars

Sonex Aircraft LLC has announced the introduction of a new labor-saving Sonex Aircraft Complete Airframe Kit option: Pre-Assembled Main Wing Spars for Sonex and Waiex airframes. While retaining full compliance with the FAA's experimental amateur-built regulations, these pre-manufactured optional kit components can be expected to greatly reduce build time. Sonex is making this new kit purely optional. The standard Sonex Aircraft Complete Airframe Kit includes extruded and machined main wing spar caps, laser-cut and pilot-drilled main wing spar web laminations, and timesaving laser-cut main wing spar cap spacing tools. Full details and pricing can be found at www.SonexAircraft.com.

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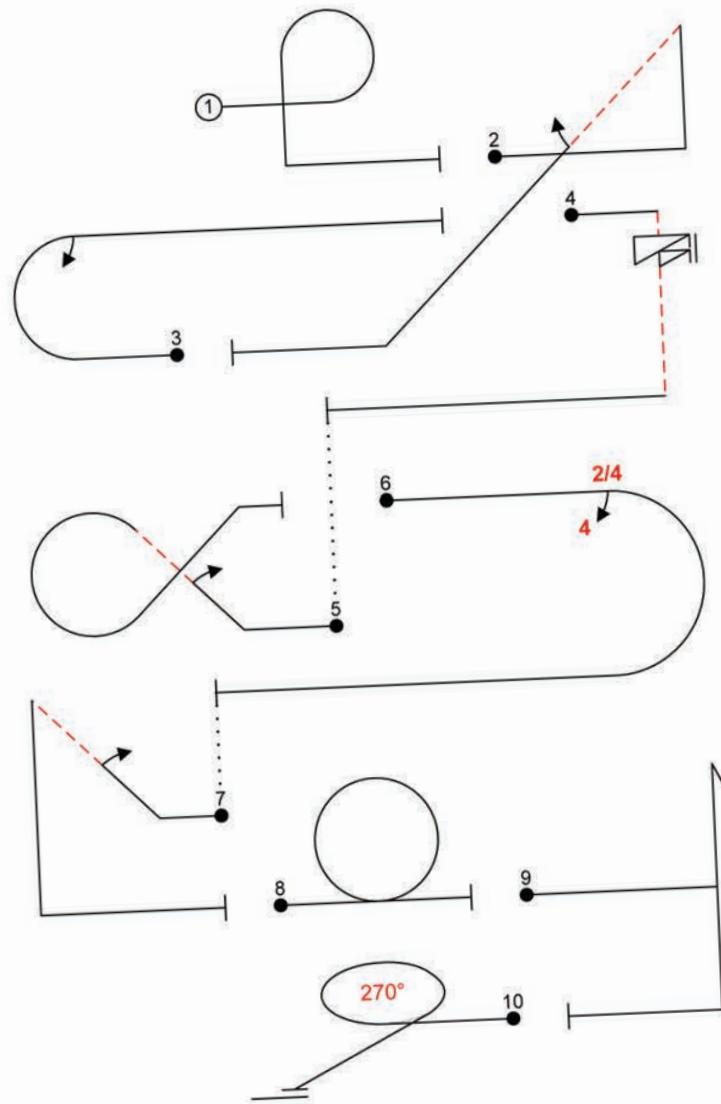
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Flying Sportsman

The 2008 sequence John Morrissey

Most of our new IAC accessions enter the aerobatic arena through our Sportsman category. So like many before you, this may be your first experience with competition aerobatics. The purpose of this article is to help you make that experience as safe and enjoyable as possible. In the piece that follows you will not find a detailed how-to analysis of each individual maneuver, as that should have already been covered during

the dual phase of your training. What you will find is a discussion of the "game" of aerobatics, a few comments about each maneuver, and some of the intangible skills that must be mastered before attaining consistent success in competition. But a word of explanation is in order. Each maneuver in aerobatics has a procedure as well as a technique. The procedures can be taught relatively quickly, but the techniques are more

individual in nature and must suit the pilot and aircraft combination. They are as difficult to teach as they are to explain. But one thing is certain – there can be no technique unless the proper procedures are learned first.

Sportsman is the first of our four main categories in the IAC competition system. I believe there are some basic assumptions one should make when discussing the purpose of the Sportsman category



Ron Gerot

It is common for Sportsman to be the first category flown by pilots when they begin to compete.

and the preparations that should be made before entering your first competition. Remember that you will have only one chance to make a good first impression on your judges and colleagues. For this article I have assumed that procedures for all of the basic maneuvers for Sportsman competition have been learned "one off." I believe that you should be able to perform all of the maneuvers in your Sportsman sequence at least at the 7.5 level of competency prior to linking those maneuvers together during sequence practice. Those basic skills/maneuvers include emergency spin recovery procedures, proper box entry technique, basic line and angle control, aileron roll variants on level and 45-degree lines, radius control, the difference between transitioning from a "plane" to a "plane" and a "plane" to a "radius," and the vertical up line with pivot.

Energy management, precision upright spins, the ability to control wind during a sequence, and understanding how to present your sequence to the judges are also basic aerobatic skills that need to be learned during your Sportsman training and mastered prior to moving to Intermediate. Additionally, developing a working knowledge of the rules of competition as they apply to the decisions you must make during flight is essential and assumed. One simply cannot play any game successfully without knowing the rules of that game.

Mastering Maneuvers and Sequencing

Every category has key maneuvers that must be mastered prior to moving to the next level. Mastering the aileron roll and the vertical line with pivot are the key lessons that must be learned and perfected to

Your flight must look the same to your judges on a calm day as it does on one with high winds. Your performance must make the wind appear to stop.

ensure success in Sportsman as well as all categories to follow. Let me explain this by looking at the Family 9 aileron rolls in this year's sequence. A Family 9 roll occurs in six of the 10 figures (60 percent). The "K" for those six Family 9 rolls is 28 (21 percent of sequence "K"). However, the "K" for those six maneuvers including Family 9 variants is 89 (67 percent) of sequence "K." This means that in the 20 "K" figure 5 goldfish, a botched half-roll on the 45 up line could easily reduce your score on that figure from a 9 to a 7—not good! Neil Williams, in his defining work, *Aerobatics*, has a quote we should all remember: "The slow roll (now called the aileron roll) is really the key to advanced aerobatics."¹ And to this I add that we better get it right from the beginning.

With this in mind, ask yourself if there are any maneuvers in the 2008 Sportsman sequence that you cannot do consistently at least at a 7.5 level. If there are, delay practicing sequences until you get those maneuvers under control individually.

After you have good command of all of your maneuvers, we can look at their placement in the sequence and their altitude/energy requirements. This is the beginning phase of the all-important presentation portion of your sequence. Remember that you will be flying the same sequence as all of your other competitors. By the time you fly, the judges may have already judged 20 or more identical programs. When it is time for your flight, it could easily be late in the afternoon of a very hot day when the winds are increasing and the judges are getting sleepy. Your job is to rise above these impediments. Your flight must be clearly superior to those that have already been judged. You must tell your story differently! It is your job to create a rhythm, flow, and presentation that are superior to those flights of identical maneuvers. This technique is neither easy nor easily defined. Your presentation is the key to this aspect of your flight and must appeal to all of the judges' senses, including the ergonomics of your judges' neck-angle limits. It must produce a balance of space and time between and within your

maneuvers. It must not give the impression of low energy or rushing to avoid outs or lows. It must create the illusion of perfect control of your performance on your "stage" within the aerobatic box. You must fly in your stage as the ballerina controls her stage—never looking down and yet never being visibly influenced by the edges. Your hands and feet must instinctively fly the maneuvers while your attention is totally devoted to the position, rhythm, and flow of your performance—and a performance is just what it is. Your flight must look the same to your judges on a calm day as it does on one with high winds. Your performance must make the wind appear to stop. And when you finish you must leave the judges wanting to see more, rather than being glad that they are one sequence closer to the end of the flight program.

Of course, all that I have mentioned does not have to be mastered prior to your first competition. But if you take the time to learn all of these techniques

while you are honing your craft in Sportsman, your road to the higher categories will be much easier and much more enjoyable.

Flying the Sequence

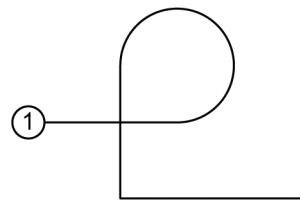
Now let's take a preliminary run through your program from the beginning. Please consider for a moment that you will be evaluated from the moment you are visible after takeoff until you leave the box. That means that the judges' initial impression of your competence will occur prior to grading maneuver No. 1. Your job is to begin to separate yourself from your competition by a concise box entry that allows the judges to follow and anticipate your flight path while remaining in their view; get in front of the judges and stay in their ergonomic viewing angles while you position yourself for entry. Remember that if you fly in a position that will cause a judge's neck to tilt too far backward

or causes the judge's head to tilt to keep you in sight, the judge's neck will hurt and he will lose the level reference between his eye line and the horizon, and therefore the ability to evaluate your figure—not good! There is more than one way to create such a box entry. Either devise one that meets the criteria above or ask your coach to help you create one... and then practice it on every flight.

Maneuver No. 1, a P-loop, is essentially a loop into the wind with a brief vertical down line at the three-quarter point. I suggest one solid second in that vertical phase. Your speed at this point will be about 180 feet per second, and one second is

plenty long enough, even though it may not feel like it. The pull from vertical down to horizontal is not the same type of pull as the last quarter of the loop. Let me digress at this point to cover

the essential difference between the "linking" radii between a plane to a



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plane *pull* and *flying* into a radius from a plane. To use maneuver 1 as an example, the first transition is from a level plane to the radius of the three-quarter loop. In this type of a transition between a plane/line and radius, one *flies* the plane into the radius and adjusts the g/pitch rate as necessary to compensate for aircraft speed and wind velocity. After the vertical down line at the three-quarter point in the loop, use a *pull* out from a (vertical) down plane to the level plane technique. In this case one *pulls* the aircraft from one plane to the next, and while the maximum g need *not* be higher than the transition from a plane to a radius, the g is achieved much sooner and held hard until the plane is reached. The 180 feet lost in the vertical down segment will, of course, cause the maneuver to lose 200 feet, so plan on an entry altitude of 2,800 and exit at 2,600.

Maneuver No. 2, a wedge, should be entered with good speed that is easily obtained due to the nature of maneuver 1. Use the plane-to-plane pull technique to achieve the vertical and do not hold that vertical so long that you are low on energy. The trick here is to depart the vertical with sufficient energy/speed and pull as rapidly as possible just short of the buffet until your nose is about 10

degrees above the horizon. At this point relax almost all of the back-pressure. This will cause your angle of attack to approach zero and allow the aircraft to begin accelerating. The aircraft will continue its pitch rate as radial g will be sufficient at this low airspeed to create the illusion of a brisk pull down to the 45. And although there is not space in this piece to discuss the difference between cockpit g and radial g, you should become very familiar with that

difference, as it is essential to energy control. Suffice to say that radial g is the g that causes the nose to pitch. Cockpit g is the force on the plane normal to the wing. And they are only the same in vertical flight. So, about 10 degrees prior to your nose reaching the 45 down angle, gently begin to add forward stick and arrest the pitch rate briskly as your 45 down angle is reached. Do not be in a hurry to begin the half-roll. You should wait twice as long before the half-roll as after and then use a brisk plane-to-plane pull to exit the maneuver with good speed; plan on losing 200 feet in this maneuver.

Maneuver No. 3, the Immelmann. Do not wait too long to begin the

pull for No. 3 or you will be on a cross-country on the top line prior to the spin. This is as good a time as any to introduce you to the idea of proper spacing between maneuvers. The basic premise here is that there are two lines between maneuvers in aerobatics—the fast line and the slow line. Plan on fast lines going 300 feet per second (fps) and slow lines going 100 fps. These are not exact figures, but accurate enough to develop the inner clock that you will need for good presentation. If you want the space between maneuvers to be the same (and you do), try using one second (300 feet) on fast lines between maneuvers and three seconds (300 feet) on slow lines between maneuvers. So in a perfect world, we would have already used one second between 1 and 2, one second between 2 and 3, and three seconds between 3 and 4. Yes, this timing will of course have to be varied based on wind conditions, pilot-induced positioning errors, and/or sequence design. But it is a technique that

will help make your sequence flow much better than just trying to keep it in the box to avoid outs. Now a word about the half-roll on top of the half-loop. Try this technique: Make the radius of the half-loop as tight as you can on the fuzzy edge of the buffet in order to finish the half-loop portion of the maneuver with maximum energy/indicated airspeed (IAS). When your nose is about 3 degrees above the horizon, release the back-pressure completely and *then* add full left aileron. When you release the stick, the angle of attack (AOA) will go to zero, but the radial g will be +1 with low velocity. This will allow the radius to continue at zero AOA. And since the AOA is zero, full aileron can be used without any adverse yaw; therefore, no rudder is needed. To make this technique work, no rudder or forward/back-stick should be used until the half-roll is complete. In addition to creating the illusion of a perfect Immelmann, it eliminates any possibility of spinning out the top of the maneuver as AOA is zero and there is no yaw. Plan on gaining 800 feet in this maneuver.



Clay Smith

The evaluation process begins even before the first maneuver is flown.

Maneuver No. 4 is a 1-1/2-turn spin. Exit maneuver No. 3 with the deck angle that you will use to enter the spin and do not change this angle. Hold altitude with whatever power it takes to stabilize your airspeed about 5 mph above your 1g stall speed.

When you arrive at your desired spin position, simply squeeze the throttle to idle while simultaneously adding full back-stick and full pro-spin rudder. Done correctly, the nose will drop cleanly into the spin without bobbling. Some advice here: Spin entries are always cleaner if entered from a small climb. Plan on losing 1,500 feet in this spin. However, since a very high speed is not needed in any maneuver for the remainder of this sequence, recover at moderately high speed (about 15 mph IAS less than

maneuvers 1 and 2) and look for a 1,400-foot loss.

Maneuver No. 5, a goldfish, should begin one second after No. 4 is completed. Remember, you will have the wind at your back, so when you pull (plane-to-plane technique) to the 45, do it briskly and be sure and get *all* of that 45. A one-second pause

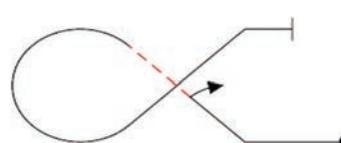
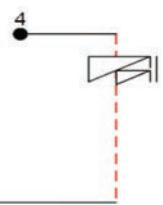
prior to the half-roll is sufficient, as is a two-second line after. Begin the integration of a plane (your 45 line) with your three-quarter loop gently! Be certain to carry adequate speed into the radius while remembering

that your g/pitch rate should be least when speed (in this case groundspeed) is least. You will reach the 4g point in

this maneuver when your nose is about 45 degrees past vertical down.

Hold the 4g's until reaching the 45 up line where you want to make a sudden and hard stop. You will be under 4g for more time than in a loop, so prepare yourself before it builds. Due to radial g your cockpit g will be very light on top of the radius and very similar to the feel during the top of a loop. When you transition from the 45 up line to the level line, do so with good speed (about 75 mph) and use the plane-to-plane technique and push off briskly while still maintaining acceptable speed until your nose is very slightly below level flight, even if you lose a little altitude. This will allow you to accelerate rapidly so you can control the 2 of 4 in No. 6. Expect to gain 700 feet in this maneuver.

Maneuver No. 6, a 2/4 split-S, should be entered at maximum speed with your deck angle parallel to the ground. Roll with maximum roll rate but do *not* rush the pause between the points. Come to a hard and complete stop between points. Your pause should be at least as long as



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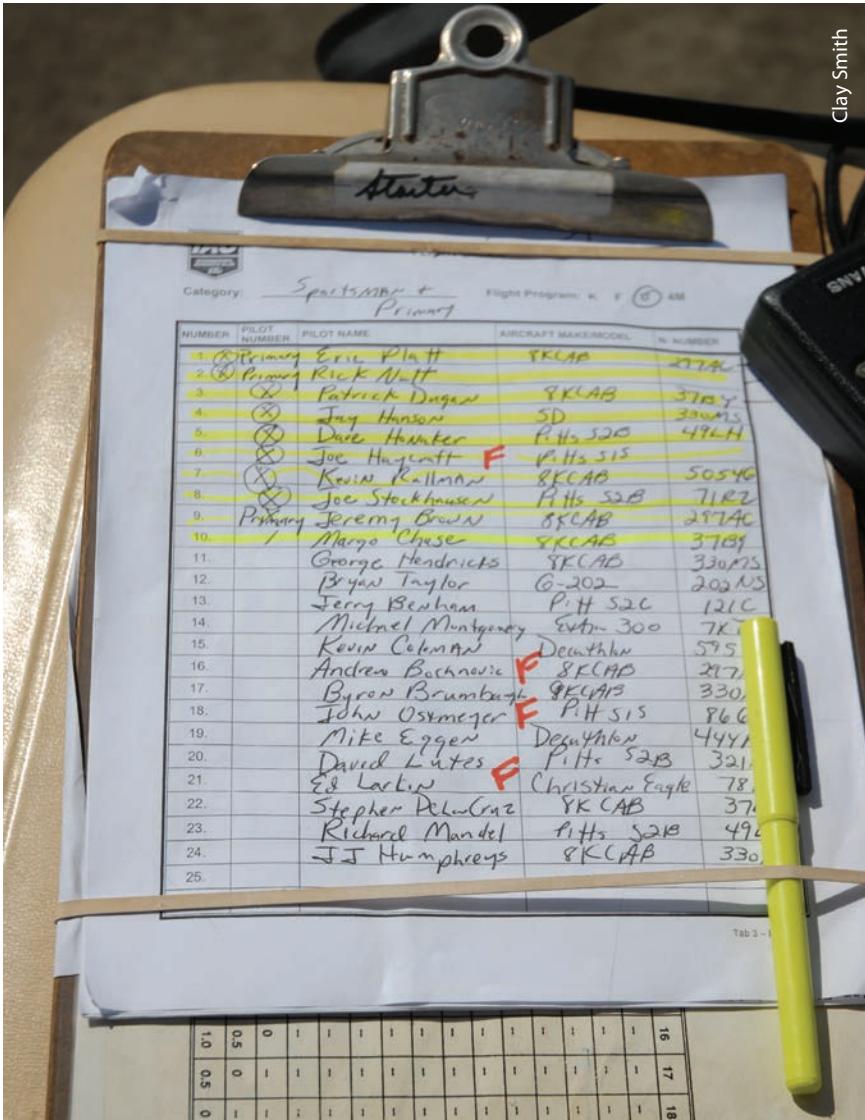
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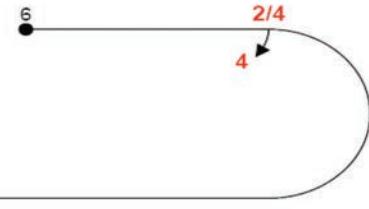
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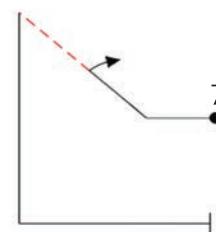
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UPPER: Sportsman is often the largest category at a contest, and your job is to stand out from the crowd. LOWER: If a sequence card is used during flight it should also be used during the walk through.

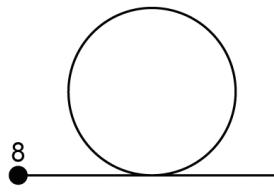


it took you to roll the 90 degrees to reach the point. Let your nose begin the drop below the horizon with about 2 degrees of roll remaining. This will not be seen by the judges but will create the illusion of a perfect integration of roll and radius. When entering the half-loop after your 2 of 4 roll, consider that you will be at a relatively low groundspeed due to the net effect of your airspeed and head wind; therefore you will have to adjust your g/pitch rate based on your head wind and groundspeed. We must think groundspeed here because the looping portion must look perfect to the judges and must be corrected for wind. When integrating the plane with the beginning of the down half-loop, remember to softly fly, not pull your aircraft into the radius. Your first 5 degrees of pitch will set the radius of your half-loop, so do not pinch it. After you have completed 45 degrees of this half-loop down, you must increase the pitch at a greater rate than you would in the more traditional into-the-wind loop. Your initial cockpit g will be less than +1 building to about 2 when vertical down and 4 with 45 degrees of pull remaining. Remember this half-loop down is nothing more or less than a variation of a downwind loop. As such, maintain your 4g pull until level. Another caution on the effects of g here: The split-S will keep you under g with increasing speed for quite a while, so take precautions prior to the onset of that g. Plan on losing 800 feet and exit with adequate, but not excessive, speed for No. 7. In an S-2A or Super Decathlon I would use 150 to 160 mph.



Maneuver No. 7 is a reverse wedge. Use the plane-to-plane pull techniques between each segment. Use the same half-roll technique on the up 45 as you did in No. 5, but realize that you can make each line slightly longer as you do not need the energy to sustain a three-quarter-loop radius. Make the pitch rate from the inverted 45 up to the 90 down as high as possible and in moderate buffet, increasing pitch rate as you approach vertical down. Plan on losing 200 feet and try to finish with good speed for the loop. If you have planned properly you will be at 1,500 feet with good energy.

Maneuver No. 8 is a standard loop. There is not too much to say here except try for one second between



You must learn to handle the wind as naturally as you blink your eyes.... Once you do, you will never be held hostage by the wind again in aerobatic competition.

No. 7 and your loop and fly, not pull/jerk, your aircraft into the radius; float it nicely across the top with the minimum g/pitch rate at the lowest groundspeed. On recovery, since this is an into-the-wind loop, begin your transition from 4 (or highest) g about 15 degrees prior to finishing the loop to avoid the "hook" at the end. The greater the head wind the longer you should take to reach your 4g pull in the beginning and the sooner in the radius you should be transitioning from your maximum finishing g to

level flight. Plan on no altitude loss. Your exit speed is unimportant as the hammerhead is not speed-critical.

Maneuver No. 9 is a hammerhead. If you want to win the flight you have to win or tie this maneuver. Again, try for one second between the loop and the hammerhead. Use a brisk plane-to-plane hard pull to the vertical with a hard stop. Once vertical, do not let the plane budge. The pivot will work perfectly if you are motionless and vertical in both the pitch and yaw/vertical axis and

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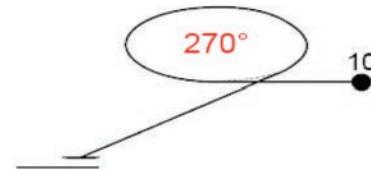


Successful pilots make their presentation comfortable for the judges.

you briskly initiate your pivot at the correct speed while maintaining zero roll and pitch movement during the pivot. It goes without saying that the aircraft does not stop its vertical ascent

prior to pivot. Typically you will still be moving about 30 mph as the pivot is initiated. In the S-2A or Decathlon, the tip of the airspeed needle will be on the left side of the "h" in the mph nomenclature/placard at the top of the airspeed indicator. Now, this is just technical information. Do *not* look inside the cockpit during any aerobatic maneuver, especially the hammerhead. Plan on zero altitude loss and do not forget that if needed you may exit the maneuver slightly

higher than your entry altitude without penalty. Your exit speed should be moderate, about 140 to 150 mph in an A or Decathlon as your next maneuver is not speed-critical.



Maneuver No. 10 is a 270-degree turn. Begin this maneuver at a point that will allow you to turn *away* from the judges and finish exactly on the y (minor) axis toward the judges. Begin by briskly rolling the plane to about 70 degrees, *then* initiating back-pressure to turn the aircraft 270 degrees. Make a hard stop of the turn and then rapidly roll the aircraft to level flight pointed directly toward the chief judge. Pause three seconds and then rock your wings three times while exiting over the judges. Wing rocks should be brisk and evenly matched in roll rate, angle (I suggest 45 degrees), and pause length. Treat them like a point roll (i.e. roll, stop, pause, roll [back], pause, roll, stop hard, pause, etc.). Look like you know exactly what you are doing in these wing rocks. Why so much attention to the end-of-sequence wing rocks? Because there is one more grade yet to be given—presentation! So don't diminish your great flight by creating the impression that you are glad to be done and in a hurry to land and use the bathroom. Once you have exited behind the judges, relax, calm down, and join the pattern for landing while watching out for traffic.

But what if there is a big crosswind? There are no cross-box maneuvers! And that is why they have first-, second-, and third-place trophies as well as the Grogan Belt. You must learn to handle the wind as naturally as you blink your eyes. The techniques required to implement those procedures are not possible to teach in print. It takes awhile to learn but, once you do, you will never be held hostage by the wind again in aerobatic competition. And without wind control, consistently good presentation is impossible.

Final Thoughts

Some final suggestions that apply to all categories:

- Do not continually practice sequences. It is a waste of time, fuel, and energy.
- Practice groupings of maneuvers in a marked box.
- Practice your box entry at least once on every flight.
- About a week prior to your contest, practice your sequence in its entirety. Practice only one sequence per flight during your pre-contest tuneup. After each sequence, practice the maneuvers or groupings that have given you the most problems.
- Try not to “go to the library” too often in a flight. The sequence card is not a research document. If you use a sequence card during your flight, use it during your walk-through and look at it exactly where you will in your flight; bring it into your cross-check at specific, rehearsed points. Remember that every time you look at that card, you take your eyes away from your arena.
- Begin this sequence halfway between the x-axis and the far side of the box. The lower you get, the closer to the judges you should be. For ergonomic reasons, do not get any closer to the judges in Sportsman than halfway between the judge’s boundary and the x (major) axis.
- Do not rush between maneuvers or your rolls within them.
- Never get low on energy and low in the box at the same time. Have a rehearsed plan to handle that situation.
- Focus on your stage, not the maneuvers (or sequence card).
- Keep a journal for all maneuver energy, speed, and altitude requirements as well as your tendencies. You will need this book to prepare for your contest flight.
- Always know where the judges are; fly for your audience (the ones with the No. 2 lead pencils).
- If you either are, or are about to be, seriously below your energy checkpoints during the sequence, immediately pay the five points for an interruption by rocking your wings *before* you take the out. After you leave the box, think, calm down, and re-enter with a plan, good energy, and the required wing rocks so you can fly aggressively and confidently for your remaining maneuvers.
- If at any time you become disoriented or forget the next maneuver, immediately attain upright or inverted level flight and rock your wings for the interruption. And get this accomplished prior to taking an out to go along with your interruption penalty.

Finally, get a trainer to look at what you are doing once in awhile. Resetting someone’s muscle memory or lines can take a very long time. I wish you all the best as you prepare to compete, and I hope these tips will help you be successful in the Sportsman category. ☺

John Morrissey has been teaching competition aerobatics since 1978. He and his wife, Linda Meyers Morrissey, and his son, Matt, operate Great Planes Aerobatics and conduct yearly aerobatic training camps at Ashland, Kansas. John was U.S. team trainer from 1991 until 1996. John, Matt, and Gerry Molidor were pilot members of the gold-medal-winning U.S. Advanced Team in 1997 that was coached by Linda.



Courtesy John Morrissey

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St. Augustine, FL

Dan Salcedo and His Pitts S-1-11

Budd Davisson, photos by Jim Koepnick



... the best-kept
secret in aerobatics?



"When I found out the Pitts could be built by just about anyone, I thought, I've got to get one of those."

At the exact moment I hit a thousand hours' total pilot time, I was going straight up and rolling like crazy," laughs

Dan Salcedo of Ft. Lauderdale, Florida. So it can be said that, yes, he's definitely having a good time with his Pitts S-1-11, which many feel is still the best-kept secret of the aerobatic world.

The Model 11 Pitts, aka Super Stinker, aka S-1-11, was Curtis Pitts' last single-seat design (1993). It was his response to the monoplane dominance of the Unlimited aerobatic world as well as an attempt at designing an

Advanced/Unlimited airplane that the average guy could afford to own through sweat equity. The airplane was his first homebuilt design to feature a six-cylinder Lycoming.

It was on the Model 11 that Curtis developed what has come to be known as "Super Stinker Aileron Technology." It's an extremely clever way of hinging the ailerons and shaping their nose profile. The further they are deflected, the more the aileron gap seals and the more effective the ailerons become. The net result is feather-light stick pressures and a roll rate of 350 degrees per second. This compares favorably with the high-buck, monoplane specials, yet it has no spades. Even better, it can be built from plans. It was the airplane's reputation as a fast-rolling, affordable rocket ship that attracted Dan to it.

"I was looking for a way to do better in Intermediate and move up to Advanced, and the S-1-11 appeared to be a way to do it. Besides, I love Pitts Specials," adds Dan.

Dan can trace his lifelong obsession with Pitts back to his junior year in high school. He says, "My dad had a 172, and we went to Oshkosh when I was a junior and I saw the Red Devils flying their Pitts. When I found out the Pitts could be built by just about anyone, I thought, I've got to get one of those."

He finished learning to fly when he was 22 years old, but he'd already

spent three years working on his airframe and powerplant (A&P) certificate and earning an associate degree in aviation maintenance management.

"My second year in A&P school," he says, "I bought S-1D plans; then my brother and I bought a Citabria, so at least I was doing aerobatics. That was followed by an S-1C project." That airplane wound up with a 180 Lycoming and a finished weight of 805 pounds, so it was a hard charger and Dan was definitely hooked. "The weird thing," he says, "is that I only had about 80 hours' total flying time at the time."

Dan met his wife, Ann, while attending A&P school in Danielson, Connecticut. He says, "Ann is my partner in everything I do. For my 30th birthday, she bought me a Pitts S-2A. In 1987 I started flying Sportsman in that airplane. In fact, at the Sebring contest, I was critiqued by Clint McHenry." During this time, while working for Eastern Airlines, Dan started hearing things from the company that he didn't like. He says, "They announced they were going to start laying people off, so I packed up my tools and started looking for a job."

He went to work as an A&P instructor at George T. Baker Aviation School in Miami, Florida, which must have been a good workplace, because 20 years later, he's still spreading the mechanical gospel there. After flying several contest seasons, the S-2A was ready for a rebuild. He says, "I rebuilt my S-2A completely in 14 months, flew for one week, then won the Keystone, Florida, contest in Intermediate, my first-ever placing. Shortly after, I moved up to Advanced and won in Sebring, 1999, but, of course, I needed more 'power,' as the S-2A was working at its limits."

"The S-1-11 came about because I wanted to stay competitive in Advanced, and Ann knew I needed more power. She contacted Eddie Saurenman, who owned the Super Stinker rights at the time, and bought the plans as a surprise birthday present for me. Eddie had reservations about selling Ann the plans. At the time, Ann was an aerobatic novice and here she was talking to Eddie about purchasing plans to build a Super Stinker. Later Eddie said, 'She had so many questions!'



"I started on the wing ribs on our kitchen table at home. Not soon enough for Ann, I moved to the hangar, where I began building a real wing table for assembly. Eventually I was to have two partners in the airplane, Allan Byrd and Jim Murphy, but a short time later they perished in a spin accident in their S-2B, putting the Model 11 project on hold for two and a half years. Finally, after restarting the project, I finished it in 2004.

"By the time I was done, I had 3,500 hours of building time and three and a half years into the project. It would have been even longer, but Kevin Kimball of Kimball Enterprises in Zellwood, Florida, welded up a fuselage for me, which really enabled me to jump ahead.

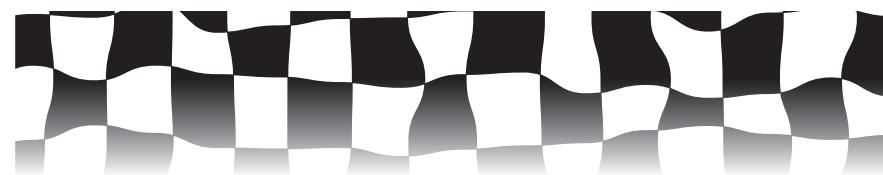
"I used an angle valve IO-540, which I knew was heavier than a parallel valve engine, but they cool better and have a little better dependability because of that. The engine weight shows in the airplane's empty weight of 1,180 pounds, but with the 203-centimeter three-blade MT prop I purchased through the Kimballs, it's a rocket anyway."

The plans Dan was building from were drawn up by Eddie when he and his company owned the rights. Those plans were for the Super Stinker as it was originally designed and built by Curtis. They are full-production drawings, as opposed to some home-built drawings that leave a lot to the imagination. When the design was sold to Aviat Aircraft, its engineers went through the airplane and left most of the aerodynamics and structure alone, but worked on some ergonomic and cosmetic issues. Among other things, they leaned the turtle-deck bulkhead back and reclined the seat quite a bit from original. They designed a flat wrap windshield that flowed into the bubble and pulled the belly lines up, giving the fuselage a very monoplane outline. The plans Aviat sells are for the Super Stinker, as drawn by Eddie, but the kit parts it sells have the modified outlines of their S-1-11B.

Dan says, "I put in some of my own touches into the project that are similar to Aviat's, including a carbon-fiber, semi-reclined seat, and a squared-off rudder. I also added a rib in the prop blast area on all four wings because they take such a beating. I also fabricated a removable aluminum belly that runs clear to the tail post. This lets me get up inside the airplane for inspection and maintenance.

"I developed my own canopy outline and mounted it using a carbon-fiber frame of my own design. I sent an outline of the bubble to Jeff Rogers at Airplane Plastics, and when I received it, it fit perfectly. I bonded it to the frame and it's hinged for side opening."

Dan did something not many builders do: he painted the airplane himself. Before he started blowing on the R-M Diamont urethane (with a clear coat), there was the inevitable "what should the paint scheme be?" hassle. "I wanted to do something different and thought I had it worked out when I started painting, but apparently I didn't. Ann walked into the shop when I had the base coat on the aft end of the airplane, and she absolutely hated it. I believe the word she used was 'terrible,' so I had to do something different. We deliberated at length about the paint



scheme. Ann wanted it to have a big 'wow' factor, and that is exactly what we have now. People sometimes ask how much masking tape I used, and my standard answer is 'a lot!'

"When I got the airplane flying—the first flight was an absolute blast, by the way—I quickly found I had a buffet when pulling as low as 1.5g's. At 6g's, it was violent. Then I talked to Ben Morphew, who had owned the original Super Stinker for a while, and he explained a radiused fairing he put on the wing root that eliminated the problem. Apparently, the air is tripped as it goes around the top end of the gear leg, setting up a hard buffet that is just bad airflow, although it feels like a stall."

Dan had a fair amount of Pitts time, so he was no stranger to performance, but even he wasn't prepared for what the S-1-11 gave him. He says, "I'm pulling an honest 330 hp out of the engine, partially due to the Kevin Murray/Sky Dynamics exhaust and the 2 inches of manifold pressure I pick up because of ram effect. My normal rate of climb is 4,000 feet per minute, and at 25 squared, I'm cruising at 185 mph indicated. The GPS says 195 mph, and flat out it'll do 218 mph indicated down low. It's just unbelievable!"

The airplane flew for the first time in October of 2004, and Dan took the airplane to Sun 'n Fun Fly-In at Lakeland, Florida, in 2005, where he won the Best Biplane Award. Fate, however, decided to wait exactly one year, allowing him time to love the airplane, before dealing him a bad hand: Hurricane Wilma came to visit and his airplane was directly in its path.

"My hangar stood up okay, but the door of the hangar next to mine blew in and wiped out a bunch of interior walls, one of which came down on my airplane. I was sick. As I looked at the building damage from the outside, I thought, it's totaled. I was relieved when I saw how relatively minor the damage was. It could have been much worse. Still, I had a bunch of work to do."

The top wing took the brunt of the damage, and he wound up dismantling the airplane. The top wing required total re-covering and a new tip bow, and the trailing edge had to be replaced. The fuselage didn't take

"I believe the word she used was 'terrible,' so I had to do something different...Ann wanted it to have a big 'wow' factor, and that is exactly what we have now."

much of a hit, but he still had to replace the canopy and re-cover the tail.

"It was down for six months, which was frustrating, but I was still thankful the damage wasn't as bad as it could have been. Also, it gave me a chance to correct a few things.

"I missed a bunch of contests, but during the repair period, I tightened up the aileron bays by sealing the hinge areas, which made the airplane roll quite a bit faster, so it wasn't entirely wasted time. I also had time to deal with some things I might have let slip if I had been flying.

"Among other things, I taught my youngest son, Danny, to fly and arranged his checkride in our Pitts S-2A, with Mary Gaffaney as the examiner. She had inspired me early on, and it just seemed like a natural thing to do. Mary had not been in a Pitts for 15 years, and she couldn't help but take the controls for a few minutes. What an honor!

"In actuality, it's the people I've met in the aerobatic world that have made the whole project worth it. I mean, Mary Gaffaney is a legend and a wonderful lady. I met and got to know Curtis himself when flying the 'A' model. When I was a kid, I met Tom Poberezny and we talked Pitts, and his encouragement had a lot to do with what I did with my flying career. By following my dream I have had the opportunity to meet many of the aerobatic icons that, as a kid, I only got to read about in the magazines."

Today Dan is out there doing battle with the monoplanes, and while no airplane is inexpensive, he says, "The S-1-11 is such a huge bang for the buck, I couldn't have done it any other way. Like so many others, I have Curtis Pitts to thank for that." ☺





Introducing a new instructional series

Editor's Note: It is human nature to work harder when there is a specific goal to be achieved. This year, Sport Aerobatics is working with renowned master aerobatic instructor Rich Stowell to provide a series of articles designed to assist aerobatic pilots in preparing to fly for their Smooth Achievement Awards (formerly referred to as the "Smooth patch"). Earning this award is a tangible way to work toward and display your aerobatic wings. Preparation provides structure for aerobatic flights and practice sessions while building skills.

If you are planning to fly for your Smooth Achievement Award in 2008, I would like to hear from you. Whether you are a competitor or a recreational aerobatic pilot (or perhaps you love to fly aerobatics but find it hard to spend four days at a contest due to a 4-month-old baby and her 2-1/2- year-old brother—hypothetically of course!), the journey toward earning your award will be full of lessons and insights that I would like to include in a future issue of Sport Aerobatics. If this article inspires you to make earning your Primary Smooth Achievement Award a personal goal, please e-mail me at tookyflyer@tds.net. We will discuss how you might be able to share your experience with other IAC members as a guest contributor to this magazine. I look forward to hearing from you, and I would like to personally thank Rich for once again offering his expertise. —SW.

Rich Stowell, MCFI-A

What could a physician, a derivatives trader, a sales executive, an architect, a chief pilot for a state division of aeronautics, and an engineer possibly have in common? Okay, they're all pilots. But look at the following apparent disparities in their flying experience. Most are recreational fliers. One used to be a corporate pilot before switching careers, while another is a NAFI Master Instructor. Certifications run the gamut from private pilot through airline transport pilot. One pilot was certificated back in 1973; another, as recently as 2004. Total times range from 250 hours to 7,500 hours, with the pilots currently averaging 50 to 250 hours of flying per year. The youngest age when first exposed to formal aerobatic training was 27; the oldest, more than twice that. And their total aerobatic times vary from 12 to 200 hours.

In spite of such broad diversity, these six people from New Jersey, Montana, and California are representative of the more than 1,100 pilots who have earned an International Aerobatic Club (IAC) Primary Smooth Achievement Award. The first such award was granted nearly four decades ago in what was then the Basic (now Primary) category. Long referred to simply as "patches," the IAC updated the tangible awards in 2006. Applicants can now choose any or all of the following accessories to accompany their paper achievement certificates: traditional cloth patches (while supplies last), distinctive lapel pins, and peel-and-stick decals.

No Pressure to Participate

Salivating like hungry wolves stalking fresh meat, some aerobatic pilots—well-intentioned though they may be—have been known to devour anyone who expresses even the slightest interest in aerobatics. Yet neither recreational aerobatics nor the Achievement Awards program should overwhelm those who may be interested. The soft-sell approach seems to work best here. None of our six representative pilots, for example, ever felt that they were under any obligation whatsoever to go for a Primary Smooth Award. In fact, the



Rich Stowell



Rich Stowell

UPPER: Cary B. shares his post-award joy with Judge Judy, Instructor Rich, and wife Max. LOWER: A beaming Ron V. after earning his Primary Smooth award.

Achievement Awards concept was mentioned only casually, and only after the pilots already had some emergency maneuver/aerobatic training under their belts.

When these pilots were asked what drew them to aerobatics in the first place, "to improve my flying skills" was the most common refrain. Other reasons included being inspired by watching someone else perform aerobatics, boredom with conventional aircraft, and the desire to fly like a bird.

Common descriptions repeatedly appeared when asked what aerobatics has meant to their overall flying, including safer, more confident, and more fun. In addition to these benefits, Bill G. added that it was "an opportunity for my wife and me to study a new aspect of aviation together." Jay T. said, "Aerobatics gives me more reason to fly." And without aerobatics, Ron V. "likely would have dropped out of flying."

The pilots had various reactions to the idea of training for the Achievement Award. Rick M. thought the proposal "good encouragement," whereas Jeanne M. confessed to being nervous about it. Bill G. said it was "perfect for my current state of accomplishment, and my goals." "I knew I was not accurate enough to fly the maneuvers to the appropriate standard," said Ron V., "[but] I did know that with sufficient practice I could meet the standard." Cary B. thought it "a wonderful way to be a part of the aerobatic community... without having the pressure of going out and competing right away." "I wasn't aware of the IAC Achievement Awards program," said Jay T., "[but] once I researched it online...I was excited."

Many Ways to Get There

Our six pilots converged on the Primary Smooth Award after having performed aerobatics in a cross-section of aerobatic airplanes: the Christen Eagle II, Zlin 242L, Super Decathlon, Pitts S-2B, and Citabria 7GCBC. Upon making the commitment to shoot for the award, several of the pilots proceeded at a leisurely pace until completing the requirements. Some combined dual instruction with solo practice; others flew with an instructor/safety pilot all the way through. The husband and wife duo, for example, packed their award-specific flying into a five-day "vacation" consisting of two training sessions per day apiece.

Going into their judged flights, performance anxiety (that familiar, human response to being tested) was not only prevalent, but also readily acknowledged. Cary B. said, "There was obviously a little apprehension at first, and then it pretty much went away once we got started." The competitive spirit emerged as well. Nervous though she was, Jeanne M. still "wanted to peg it." Bill G. recognized, "I was well-coached, and if I could stay focused, I could accomplish this goal." Rick M. treated the judged flight as an extension of his instructional flights: "[I] had improved during each training flight; [I] would improve on this flight."

Each pilot was able to satisfy the award requirements on one flight in front of an IAC judge. Adjectives describing the experience flowed freely afterward: thrilled, exhilarated, relieved, elated, stoked. Jay T. added, "The experience gave me new confidence and the desire to compete." Earning the patch for Ron V. "became an excellent psychological entry point for me to attempt a competition." Cary B. is "really looking forward to earning new patches!" He also echoed the sentiments of the other pilots who went through the process: "The support you get from the judges and everyone involved is what makes this so exciting."

"Common descriptions repeatedly appeared when asked what aerobatics has meant to their overall flying, including safer, more confident, and more fun."



Invite Others to Participate

Sharing your achievement with family, friends, and peers is important not only for the awards program, but also for aerobatics in general. Several of our pilots noted that other aerobatic pilots were congratulatory. Cary B. and Rick M. sent their wives out with the judge during the award flights. The wives thoroughly enjoyed seeing the maneuvers judged from

the ground (and no doubt they now capably and confidently judge all aspects of their husband's flying!). The husband and wife team in the group shared in each other's award flights with one in the air knocking out the maneuvers, while the other observed from the ground alongside the judge. Ron V. reported, "My family and friends are still getting used to me flying aerobatics. They are coming around to the idea that aerobatics is precision flying and not a daredevil activity." (It's clear we still have some work to do to improve the oft-negative connotation associated with aerobatics.)

As our representative sample reveals, these pilots are not really that different from the rest of us. Four of the six have since gone on to earn their Sportsman Smooth Awards. Two of them competed in the Primary category in 2007 and are looking forward to the 2008 contest season. Others in the group may show up someday either to compete or to help out at a contest. And if they don't, so what? They've already accomplished something special, something just one out of every 500 pilots has ever achieved. More importantly, they will speak well of their award experience to others.

In an attempt to inspire, this article leapfrogged to the happy ending. Let's now see what must be done to earn the Primary Smooth. Four maneuvers are currently required: a one-turn spin, a loop, a slow roll, and a 270-degree aerobatic turn. While we've discussed numerous recreational aerobatic maneuvers in past installments, we'll devote the next few articles to training specifically for the Primary Smooth Award. Along the way, we'll morph the previously discussed one-turn, upright spin into a competition spin, and we'll convert the aileron roll into the required slow roll. Download a Primary Smooth application from www.IAC.org/programs/primary_patch_form.pdf and start picturing yourself earning that award now. ☺

Rich Stowell is a Master Instructor of Aerobatics and author of the book *The Light Airplane Pilot's Guide to Stall/Spin Awareness*. E-mail your thoughts and ideas to rich@richstowell.com.



Effectively Marketing the Awards Program

Recreational aerobatics progressing to a Primary Smooth Achievement Award can be a gateway on many levels: into the IAC; into competition aerobatics as competitors, judges, and support personnel; and away from the stunt pilot stereotype. Yet over the course of the Achievement Awards program, IAC has averaged just 30 Primary Smooth Awards per year.

It appears we can do a much better job of encouraging and fostering

the Achievement Awards program, starting at the chapter and flight-school levels. Observations made by two of our six representative pilots, for example, are quite telling, especially since they live thousands of miles apart. One commented, "I know people who have been flying in competitions on and off for years that never won a trophy and didn't realize how accessible the Patch program was." The other said, "Not many of

my pilot friends were aware of the IAC Achievement Awards program.... Actual competition results are king out here."

Most of the nearly 600,000 pilots in the USA have at least a Primary Smooth Achievement Award in them waiting to be coaxed out. Let's encourage and promote this fun and worthwhile program, within and outside the IAC! But remember, soft sell.

 The logo is circular with a dotted border. Inside, the text "HARVEY & RIHN AVIATION INC." is at the top, and "101 AIRPORT BLVD. LAPORTE, TX 77571 (281) 471-1675" is at the bottom. In the center is a stylized drawing of three biplane aircraft in flight, with a small American flag at the bottom.

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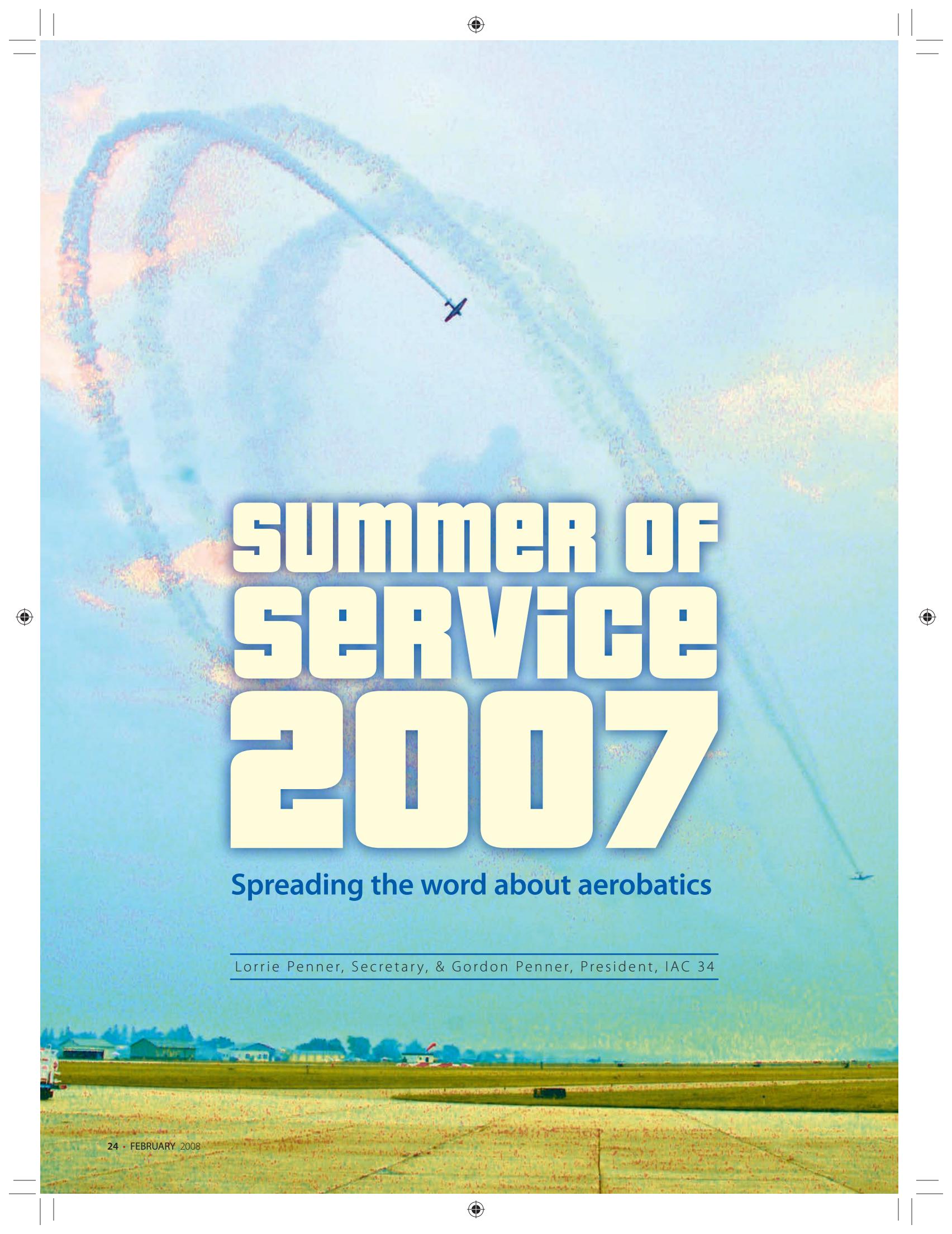
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summer of service 2007

Spreading the word about aerobatics

Lorrie Penner, Secretary, & Gordon Penner, President, IAC 34

When asked about his early involvement with IAC Chapter 34, Gordon Penner still recalls the advice from former secretary and newsletter editor Barb Hadden: Do the things you enjoy and invite the rest of the group to come along.

"When air show pilot Brett Hunter, Lorrie, and I were first sucked into the whirling vortex behind the scenes of the Ohio IAC chapter in 2003, we had no idea how to run a chapter. I was voted in as vice president, Lorrie was voted in as secretary, and Brett became president because he was well respected by all—and because he was late to the meeting. In fact, Lorrie was handed a big box of 'stuff' and told, 'Good luck,'" said Gordon. "Barb gave us some inspiration from the glory days in the 1990s of IAC 34 before the death of her husband, Ken. His death seemed to have sucked a lot of the life out of the club when we arrived on the scene."

Fast-forward to 2007 when IAC Membership Chairman Doug McConnell sent out a club-wide request to get chapters involved with growing membership for the IAC. "We already knew we wanted to do some things to improve our chapter's visibility in the Ohio general aviation world, so we got busy thinking about things we could do," said Lorrie. Gordon was chapter president by then and an aerobatic and tailwheel certificated flight instructor (CFI). He was speaking at



Courtesy Lorrie Penner



Courtesy Lorrie Penner

UPPER: Partnering with traditional flight schools to provide specialty training helps attract students to aerobatics. **LOWER:** Outreach requires taking the show on the road.



Sun 'n Fun and Oshkosh, presenting seminars on Rich Stowell's Emergency Maneuver Training program, "Stall/Spin Awareness," and on "How to Get Started in Aerobatics." This was raising awareness of aerobatics among general aviation pilots and bringing some members to IAC. In addition, IAC 34 started trying some things internally within the chapter to keep meetings fun. For example, free food is offered (since free food seems to be part of the pilot culture), and club business is kept to the board of directors and out of the broader, more fun chapter meetings.

Club business issues are communicated to (and from) the members via the website and newsletter. While the chapter makes it a point to fly at meetings whenever possible, two meetings are full practice/training days called Acro Camps to inspire club members and guests with a full day of flying, most of it in an activated aerobatic box. There is one Acro Camp in May and one in October, plus a few mini-camps conducted on an ad hoc basis. IAC 34 also created an annual aerobatic scholarship in 2006 to put some deserving soul on the aerobatic path by funding some training in a beginning aerobatic course. Making meetings fun and social and focusing on the flying has resulted in success at attracting and keeping members at the chapter level, with a retention rate at about 90 percent. Annual new members keep the chapter at between 75 to 80 members over the last four years.

An internal focus is only part of the strategy. "Outreach, outreach, outreach. This means meeting pilots who might want to join our merry band where they are. They usually don't come to us, especially if they don't know we exist," said Gordon. "Bruce Johnson, our IAC safety guru, said it best. 'For most this is a hobby. Most people cycle through a hobby every five to seven years.' We are continually recruiting new people while our institutional memory is dribbling away." There are countless things an IAC chapter can do to improve outreach. Giving seminars at places like Sun 'n Fun, Oshkosh, and other venues does reach outsiders, but it is not enough.

There are local opportunities that offer a more immediate return on the effort. "I actually think that all IAC chapters should adopt one or more flight schools," said Gordon. "I was able to run a two-day spin clinic in Sandusky with an EAA chapter that worked very well, and I would like to do more of that." The difficulty of getting access to a certified training aircraft is a subject for another article; however, we bring this up because most traditional flight schools don't have this kind of aircraft or training. This means that those of us who are both IAC members and aerobatic instructors with access to an aerobatic airplane are not competing directly with their offerings. This should make it easier to form some kind of partnership.

One of the things that IAC 34 is most proud of is the website. Unfortunately the website has also exposed how low general aerobatic awareness is. The website's two functions are to provide services for members and to have a place to send interested people when talking time is short. The website gets more than 1,000 hits per month. Lorrie set up the site, and in 2005 she won fourth place as webmaster at the EAA Oshkosh non-flying awards ceremony—fourth place out of approximately 1,100 websites. Since Lorrie was not able to attend the award ceremony, Brett Hunter accepted the trophy for Lorrie. Many in the crowd wondered who in the heck the IAC was and why it was muscling in on EAA trophies! How can we expect GA people to know who IACers are and what we can do for them when other EAA members don't know we exist? Lorrie has now become the secretary on the IAC board of directors, and she discovered that an EAA board member wanted to know what the IAC does. That's an opportunity for outreach!

It was obvious to IAC 34 that the IAC, with help from local chapters, needs to become more visible. With that thought in mind, we looked around to see what the possibilities were. In southwest Ohio the first thing that jumped onto our radar was joining up with other EAA chapters in the Dayton area to put on a static display and information tent at the Vectren Dayton Air Show. A couple of enthusiastic Dayton area EAA members had been trying to get EAA involved in the project for more than a year. The group is called the Greater Dayton EAA and consists of eight EAA chapters, IAC 34, and a Vintage Aircraft Association chapter. When we heard that the Dayton Air Show people were offering a free display area to the EAA group, we could not let the opportunity pass. So, Lorrie became the treasurer for the group and organized some IAC 34 members to display aerobatic aircraft and man the tent to talk up IAC and aerobatics.

The Dayton Air Show proved to be a ripe environment for getting IAC a little public exposure. It had been a number of years since the local EAA represented itself at the air show, and the group's display received positive comments from the general public. At the chapter level,

we gained a couple of new aerobatic students and a new member.

The next activity we got involved in was having an IAC tent at the Mid-Eastern Regional Fly-In. Besides having IAC and IAC 34 brochures, magazines, and newsletters available, we decided to try our hand at fundraising. This has been a weak area for us, with our regional contest only breaking even. So, we made a run to the store, picked up a good supply of water, juice, and snacks, and then headed out on a three-hour drive to Mansfield, Ohio. Although it was a good experience in the end, it was a rough venue. There was no air show, but the aerobatic and GA planes provided fly-bys that energized the day a bit for the spectators. The IAC display booth received good traffic both days, and we shared the joy of aerobatic flight at the booth with the general public and aviation community who attended. We gained one new member and handed out another 40 IAC brochures. Since the weather was stormy, we didn't sell much water, but we now had a stock of supplies for our next stop on the summer event track, which was Blue Ash Airport Days (in the Cincinnati area), which became our biggest success to date. With our offering of water, juice, and snacks, we felt like we attracted more people to our booth, which gave us the opportunity to talk to people who may not have stopped to chat otherwise. We made more than \$400 for the club coffers

as we sold a ton of water and juice in the 90-degree heat. We also handed out another 60 IAC brochures, signed up two more new members, and inspired at least five people to take an introductory aerobatic flight.

Overall, the officers and members of IAC 34 felt the summer of outreach was a success. We will do Dayton and Blue Ash again. Each event was manned by five to 10 of the IAC 34 members. We got to talk to people about aerobatics and show them that aerobatic pilots are not dangerous, adrenaline-crazed, bungee-jumping cliff-divers, as some of the general public seems to suspect. We also had a chance to inspire a few people to try aerobatics. A few new members were gained that would have not joined otherwise, and IAC received some well-deserved awareness. **SA**

Lorrie Penner currently serves as the secretary for IAC, and has been the secretary for IAC Chapter 34 since 2003. She is the registrar and scoring director for the Ohio Aerobatic Open, is a private pilot with 180 hours, and has earned her Primary Smooth Achievement Award. Gordon Penner has served as president or vice president of IAC Chapter 34 since 2003 and has served as the contest director for the Ohio Aerobatic Open for two years. He has been a competition pilot in Sportsman for the last five years flying his 150-hp Decathlon; is an aerobatic, tailwheel, and glider CFI; has flown for more than 28 years; and is a captain in a DC-8.



UPPER LEFT: In October 2007, Doug McConnell urged chapters to ask aerobatic enthusiasts to "Join the Club." IAC 34 has been busy doing just that.

RIGHT: The chapter 34 website provides a place to direct people for more information and helps to keep the club connected.

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TOP STORY EAA Launches New Website

EAA launched its new website at www.EAA.org on Thursday, November 1, after several months in development. The new site has a clearer, less cluttered look, simpler navigation, and a flexible, modular architecture for rapid content changes.

"The new website gives us the foundation for efficiently providing important information and services to our members today and well into the future," said Adam Smith, vice president of membership.

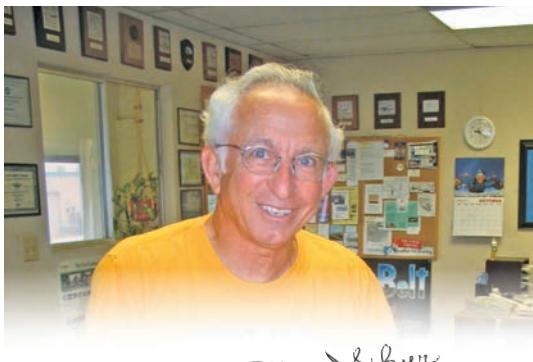
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30 Years at Oshkosh

Meet R.W. and Dorothy McFann of Illinois, who have attended in the North 40 at EAA AirVenture Oshkosh for 30 consecutive years. "We quit jobs to come here because you can't find a job, but this is only once a year," R.W. said.

Visit EAA's **multimedia offerings** for more videos that illustrate the spirit of EAA - our members, the aircraft they build and fly, chapter activities, and gene from our archives.

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Allen Silver

Ask Allen

A master rigger answers your questions about parachutes.

By Allen Silver, IAC 431160

Q: *I have a second parachute for passengers. How do I adjust it for the many different size people who wear it?*

A: The person who sent me this question was afraid if he adjusted the parachute improperly that their passenger may fall out. This should be a legitimate concern for anyone putting a parachute on a passenger. What could possibly go wrong? After all, the passenger is just going for a ride. There are many different parachute styles out there. Some are adjustable, while others have limited adjustments and should not be put on small people. The best thing you can and should do is have your parachute rigger give you a thorough briefing that includes you performing the adjustments of all the straps for a proper fit. Your rigger can also identify if your parachute has limited adjustments.

Parachutes with a conventional harness should have a minimum of five adjustments. A conventional harness has a chest strap, while an aerobatic harness does not. The basic harness adjustments include the two leg straps and chest strap, but the parachute should also have a means to shorten or lengthen the vertical distance from the waist to the shoulders. Some parachutes do not have three-bar slide adjusters, located in the small of the shoulder, above the chest strap or adjustable adaptors (Figure 1) located below the chest strap that allows for the vertical adjustment. This type of parachute harness typically does not fit someone under 5 feet 10 inches very well. In addition, certain Butler and Strong parachutes have lumbar adjusters. Once your parachute is on, these should be snugged up to keep the parachute against the lumbar area of the back. Remember, a properly adjusted harness will always keep you from departing your parachute during an actual bailout and subsequent opening shock.

When adjusted correctly, the harness will place the three-bar slides (Figure 2) just below the collarbone. If they are too high, you may not be able to reach the steering system. A steering system, in my opinion, is something all parachutes should have, and it should be easy to identify.

The leg straps are easy to figure out. If you're a guy, make sure everything is situated properly; otherwise,

you may be speaking in a soprano for a week if you bail out. The chest strap should be tight enough to keep the main lift webbing (this is the webbing that runs vertically from your waist to your shoulders) from falling off your shoulders (Figure 3) and you coming out of the harness like a torpedo. This is one reason I prefer a thread-through chest strap with no snap; you can get it tighter, especially if you're not too broad across the chest. This is especially true if you're head-down during an actual deployment. The chest strap also keeps you from falling out face first. This again is where the three-bar slides or adjustable adaptors, common on some Butler or Strong Parachutes, come into play.

The adjustable adaptors can be a little harder to adjust but the end results will be the same. When properly adjusted the three-bar slide or non-adjustable link will be in the small of your shoulder below your collarbone. If they are way out of adjustment (too long), the chest strap could end up snapping over your head during deployment. You then stand a chance of falling face forward out of your parachute harness. This would be rather embarrassing, especially since it's easy to prevent.

I get parachutes in my shop all the time where one side of a harness is adjusted properly and the other side is way out of adjustment. That is why I prefer to tack the webbing in place just above the three-bar slides to prevent the webbing from slipping during the time between repacks. This works great for the owner wearing the same parachute all the time, but requires a little work on their part for the passenger's chute. I always make sure I have my customer's measurements to make sure their parachute is adjusted properly. It does me no good to pack their parachute if they can fall out of it. I also tack the webbing in place for their passenger's chute, but I show and explain to the pilot how they can adjust it for someone smaller (Figure 4) and then return it to the original adjustments. These are adjustments you need to become very familiar with. Again, your parachute rigger and the manufacturer's instruction manual is the place to start.

The aerobatic harness presents different problems, but is very popular. You should definitely talk to someone before putting this style on a passenger. Because the leg straps also become the chest strap, you must pay particular

attention to make sure everything is adjusted properly. If you have any questions about this, now is the time to ask your rigger or give me a call. I also suggest a bailout seminar, like the ones I give throughout the country. There is nothing like a good show-and-tell seminar to make your entire flying experience as enjoyable and safe as possible for you and your passengers. Remember, they are relying on you for their safety.

I want to thank you for a wonderful 2007. I look forward to receiving all your questions this coming year. I've enjoyed your many wonderful e-mails and phone calls, and always welcome more!

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

Fig. 1



Fig. 3



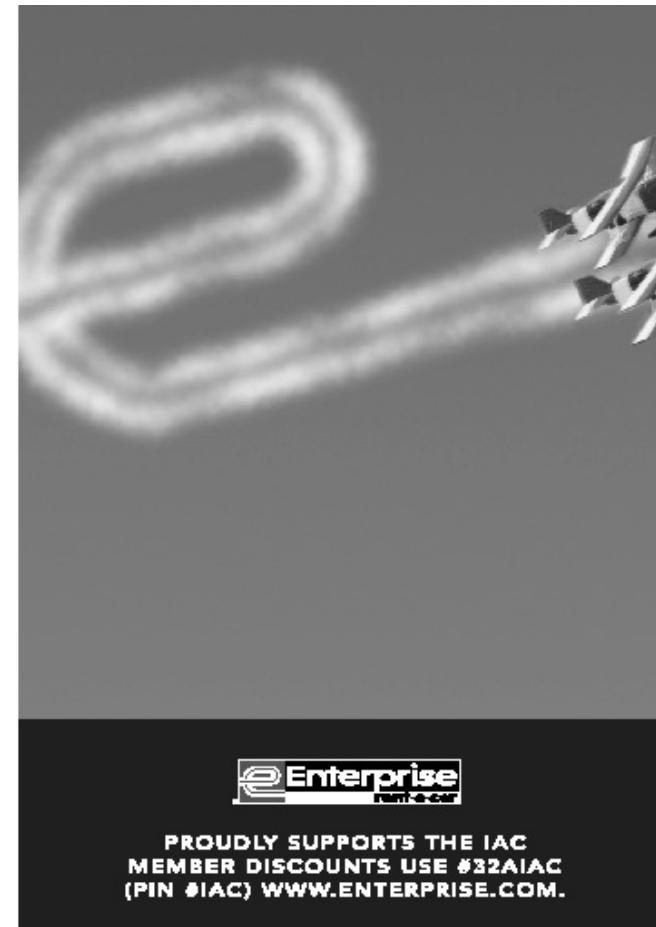
The chest strap should be tight enough to keep the shoulder straps in place.

Fig. 4

Adjust webbing between 3-bar slide and tacking



Fig. 2



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Courtesy Diana Richards

My aunt is my "Roll Model" • by Elizabeth Triplett, 12 years old

My Aunt Diana pulled the plane up and looked back from the pilot's seat at me. "Do you want to do it again?" she asked me. "You bet!" I said excitedly. She climbed higher and higher into the air and slightly dropped the plane. "It's time to go back down to the farm now. Your brother probably wants a turn too." Already? I thought. It seemed as if I had gotten into the plane just seconds ago. We landed the plane and my brother jumped into the back seat where I had been sitting just a few minutes before.

My Aunt Diana had always been someone I looked up to. She is a strong, courageous person, and we are very much alike. She does many riveting things in her airplane on their farm. She does exciting tricks in the air called aerobatics. If you don't already know, aerobatics are flips, turns, and dives in the air. I think of it as gymnastics in the air, but it takes a lot more skill and nerve. I have been flying with my Aunt Diana since I was 4 years old. I love the tingling in my stomach, and the sensation of the drops. We always point out the ground below and the lakes and landforms that we see. The ground below me always looks like a super-sized quilt. The winding fields each create a patch on my flying quilt.

Although I'm not old enough to do aerobatics, we still do fun, exhilarating things. Last time we went to the farm the gravity meter hit zero! My Aunt Diana calls it "zero g." I loved the light, floating feeling of that flight! She also does a few small, but breathtaking drops with me. I laugh and an excited feeling rushes over me. Any other kid might have been scared, but I sure wasn't!

She also goes through safety drills with us. She reviews things such as how to get out of the plane in an emergency and how to use our parachute. My aunt says that I have the courage and determination to do the things that she does someday. I sure hope she's right! I can't wait until I am old enough to do aerobatics and more awesome activities with her. My aunt is my "roll model" and inspiration. She has always taken me flying every Father's Day (it's a Triplett family tradition), and we haven't missed a flight yet.

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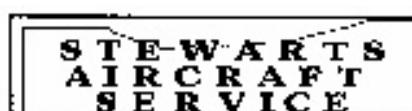
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meet a member



Name: Erich Kunrath

City, Country: Colorado Springs, Colorado

Occupation: U.S. Air Force pilot

Family: Single; Mom, Dad and three favorite sisters

Pilot Certificates: Private pilot & commercial with an instrument rating, Air Force Undergraduate Pilot Training

Aircraft flown: Schweizer 2-33, C-172, T-41, T-37, T-38, B-1B, Blanik L-23 and L-13AC, Schempp-Hirth Discus

What experience drew you to flying or the Air Force (whichever came first)? I grew up flying between Portland, Oregon, and Salzburg, Austria, to visit family. Although I wasn't the one flying, I always enjoyed the experience. Stepping onto an airplane, visiting the flight crew in flight, and ending up on the other side of the ocean nine hours later was just the start of an adventure. I couldn't figure out why anyone would want to wear a mask and helmet while flying, though. It wasn't until I started looking at colleges that I became interested in the Air Force. My first time piloting an aircraft was as a cadet in the AF Academy soaring program, and from there it continued.

What is your favorite plane to fly? The best plane to fly is always the one you're currently flying. I figured out the basics in gliders, which provide flying in its purest form, then learned how to convert fuel into noise and speed flying the B-1.

What was your first experience with aerobatics? In pilot training, we learn basic aerobatic maneuvers during one phase, and on the first solo to the practice area we're signed off to fly loops and rolls. I thought I perfected loops a while ago, then I flew with IAC judges watching.

Tell us a little about the glider program at the Academy. Our mission is to inspire and develop tomorrow's war-fighting leadership through the dynamic experiences of soaring. The majority of the cadets that fly in our programs have aspirations to continue on to pilot training. We train 80 cadet instructor-pilots every year during a semester long training program consisting of 80 flights. Once they pass their checkride, they're responsible to teach the classes behind them the basics of flying, how to handle emergencies and to

develop their airmanship skills. We challenge a select number of cadet instructor-pilots by teaching them to use the entire performance envelope of the gliders in aerobatic contests or cross-country competitions.

Tell us a little about the gliders flown by the Academy.

Where are they made? The primary training gliders at the Academy are made in Czechoslovakia. We maintain 12 Blanik L-23 or TG-10B gliders. These gliders have a 28-to-1 glide ratio and stall at 32 KIAS. Our aerobatic team flies the Blanik L-13AC or TG-10C, which also serves as a spin training platform. A lower tail and shorter wingspan change the performance slightly, allowing this glider to pull up to 5.4 g's and push -3.0. Our cross-country team flies a high-performance, fiberglass Discus made in Germany. The glide performance jumps up to 45-to-1, which means they'll cover 7.5 nm for every 1,000 feet of altitude loss in still air. Our cross-country team members flew up to 250 nm in 4.5 hours on a single flight during this summer's competitions.

What is your most memorable contest moment? In my first contest, I consistently rolled off axis on my Cuban-eights during the first two flights. The third flight I had an epiphany, stopped thinking so hard, and when I rolled out I was pointed in the right direction. The cadets still beat me, though.

Where would you like to see yourself going in the Air Force?

When I graduated from the Academy, I knew I was off to pilot training, but I haven't been able to predict where the Air Force would take me since. I've enjoyed each assignment so far. After this flying training assignment, I would like to return to an operational flying assignment. It's competitive to get back to the B-1B, so I give my best effort at every job I'm given.

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a kid seeing a Mustang for the first time.

The Spirit of
old friends hanging out under an airplane wing.

The Spirit of
hundreds of thousands of people all loving the same thing.

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