SPORT
Aerobatics
JULY 2019
OFFICIAL MAGAZINE of the INTERNATIONAL AEROBATIC CLUB

CELEBRATING IAC MEMORIES AT AIRVENTURE

FLYING FIGURES

AIRPLANE
Thunder

TOUGH HAS MORE FUN

THE ALL-NEW 2019 FORD RANGER

With boundary-pushing available off-road tech plus legendary Ford toughness, the all-new Ranger is always geared up for fun. And clearly Built Ford Proud.

BUILT Ford TOUGH

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 about this exclusive opportunity for EAA members to save on a new Ford or Lincoln vehicle, please visit **www.eaa.org/ford**.

EAA THE SPIRIT OF AVIATION

Partner Recognition Vehicle Pricing

Available features and Ford Licensed Accessories shown.

SPORT Aerobatics
Vol. 48 No. 7 / July 2019
A PUBLICATION OF THE INTERNATIONAL AEROBATIC CLUB

Contents

FEATURES

10 Rain, Wind, and Airplane Thunder!
Leeward Aviation Day 2019
by Hector Ramirez

14 Giles G-200
Opportunity and Innovation
by Rachel Ashley

20 50 Years
Celebrating IAC Memories at AirVenture
by Lorrie Penner

DEPARTMENTS

2 EDITOR'S LOG

3 PRESIDENT'S PAGE
by Robert Armstrong

4 LINES & ANGLES

30 FLYING FIGURES
by Gordon Penner

34 HIGH ON PITTS
by Budd Davisson

37 BRILLIANCE & BUFFOONERY
by Beth Stanton

38 SAFETY SERIES
by Thomas Johnson

40 MEET A MEMBER
by Gary Debaun

44 PROGRAMS & COMMITTEES

48 FLYMART

COVER

On the cover: Craig Gifford, U.S. Unlimited Team member, dives into the box for a demonstration flight during the Leeward Aviation Day.
Photo by Bob Schlamer.

Above: Planes ready for a play day hosted by IAC Chapter 61 at the West Plains Regional Airport (UNO).
Photo by Sean Sweeney.

Editor's Log

Comings and goings

BY LORRIE PENNER, IAC 431036

LOOKING AT MY CALENDAR I can hardly believe that it is time for EAA AirVenture Oshkosh 2019! It's amazing how staying busy can make days fly by at lightning speed. By the time you read this, AirVenture will be just a few days away, or maybe you will have just gotten home from aviation's mecca. It will be an exciting AirVenture for those of us operating the IAC Pavilion, visiting with our members, showing off our new merchandise, and attending the annual meeting and IAC member gathering.

We have a full schedule of our very popular IAC forums from Tuesday, July 23, through Friday, July 26. Some new presenters include John Strong, who will be talking about surviving his first year in competition, and Susan Bell, who will talk about her rise as a competitor to become the first recipient of the Giles Henderson Memorial Trophy. Budd Davisson will present "Buying Your First Aerobatic Plane," and Michael Church will eloquently refer to spins as "Falling With Style."

This month's issue contains a couple of comings and goings. In March of 2017 Evan Peers came on as our new editor and has spent the last couple of years creating a beautiful magazine for the membership. He brought a more dynamic look to the magazine and gave us the expanded July issue. On behalf of the IAC membership and the IAC officers and directors, I thank him for the monthly content that edified and entertained us. And a special thanks for his beautiful photography that graced many hundreds of pages.

Also in this issue are two farewells from fan favorites, Beth Stanton and Gary DeBaun.

Beth has been writing her entertaining column, Brilliance and Buffoonery, for quite a while now. Thank you, Beth, for sharing all of your many personal adventures and observations in the world of aerobatics. We wish you luck and happiness with your next adventure in getting your instrument, commercial, and CFI ratings.

The Meet a Member page won't be the same without Gary's 20 years of experience visiting with people across the nation. This month's column is a fitting ending. He has finally answered the question "Why don't you interview the interviewer?" by interviewing himself. We are looking forward to seeing him back doing another type of column in the coming months, in the area of his expertise – airplane maintenance. *IAC+*

SUBMISSIONS: Photos, articles, news, and letters to the editor intended for publication should be emailed to editor@iac.org. Please include your IAC number, city, and state/country. Letters should be concise, polite, and to the point. All letters are subject to editing for clarity and length.

INTERNATIONAL AEROBATIC CLUB LEADERSHIP / www.iac.org/yellow-pages

President: Robert Armstrong
Vice President: Doug Bartlett
Secretary: Lynn Bowes
Treasurer: Bob Hart
Executive Director: Lorrie Penner

BOARD OF DIRECTORS:
Northeast Region Director: Rob Holland
Southeast Region Director: Mike Rinker
Mid-America Region Director: Justin Hickson
South Central Region Director: Ron Schreck
Northwest Region Director: Peggy Riedinger
Southwest Region Director: Jim Bourke
International Director: Debby Rihn-Harvey
Director: Bruce Ballew
Director: Bob Freeman
EAA Representative: Open
NAA Representative: Greg Principato
Achievement Awards Co-Chairs: Dave Watson and Brittanee Lincoln

Annual Awards: Patty Anderson
Chapter Relations: Peggy Riedinger
CIVA Relations: Robert Armstrong
Collegiate Program: Jordan Ashley
Contest Sanctioning: Robert Armstrong
Editorial Committee: Robert Armstrong
Executive Committee: Robert Armstrong
Finance Committee: Bob Hart
Glider Aerobatics: Jason Stephens
Government Relations: Bruce Ballew
Hall of Fame Committee: David Martin
IAC Historian: Mike Heuer
Judges Program: Weston Liu
Sequence Committee: Michael Lents
Membership Committee: Jim Bourke
Nominations: Doug Sowder
Rules Committee: Doug Sowder
Safety Committee: Keith Doyne
Technical Committee: Tom Myers

SPORT Aerobatics
OFFICIAL MAGAZINE of the INTERNATIONAL AEROBATIC CLUB

Publisher: Robert Armstrong, president@iac.org
Executive Director: Lorrie Penner, execdir@iac.org, 920-479-0597
Interim Editor: Lorrie Penner, editor@iac.org
Contributing Authors: Robert Armstrong, Lorrie Penner, Jonathan Apfelbaum, Jim Bourke, Budd Davisson, Gary Debaun, Thomas Johnson, Beth Stanton, Doug Bartlett, Zach Haskins, Sean Sweeney, David Valaer, Jim Alsip, Hector Ramirez, Rachel Ashley, Gordon Penner, Duncan Koerbel
Senior Copy Editor: Colleen Walsh
Assistant Copy Editor: Katie Holliday-Greenley
Proofreader: Jennifer Knaack
Graphic Designer: Cordell Walker

IAC CORRESPONDENCE
International Aerobatic Club, P.O. Box 3086
Oshkosh, WI 54903-3086
Tel: 920-426-6574 • Fax: 920-426-6579
Email: execdir@iac.org

ADVERTISING
Vice President of Business Development and Marketing: Dave Chaimson, dchaimson@eaa.org
Advertising Manager: Sue Anderson, sanderson@eaa.org

MAILING
Change of address, lost or damaged magazines, back issues.
EAA-IAC Membership Services
Tel: 800-843-3612 • Fax: 920-426-6761
Email: membership@eaa.org

EAA® and SPORT AVIATION®, the EAA Logo® and Aeronautica™ are registered trademarks and service marks of the Experimental Aircraft Association, Inc. The use of these trademarks and service marks without the permission of the Experimental Aircraft Association, Inc. is strictly prohibited. Copyright © 2019 by the International Aerobatic Club, Inc. All rights reserved.

The International Aerobatic Club, Inc. is a division of EAA and of the NAA.

A STATEMENT OF POLICY The International Aerobatic Club, Inc. cannot assume responsibility for the accuracy of the material presented by the authors of the articles in the magazine. The pages of *Sport Aerobatics* are offered as a clearing house of information and a forum for the exchange of opinions and ideas. The individual reader must evaluate this material for himself and use it as he sees fit. Every effort is made to present materials of wide interest that will be of help to the majority. Likewise we cannot guarantee nor endorse any product offered through our advertising. We invite constructive criticism and welcome any report of inferior merchandise obtained through our advertising so that corrective measures can be taken.

Sport Aerobatics (USPS 953-560) is owned by the International Aerobatic Club, Inc., and is published monthly at EAA Aviation Center, Editorial Department, P.O. Box 3086, 3000 Poberezny Rd., Oshkosh, WI 54903-3086. Periodical Postage is paid at Oshkosh Post Office, Oshkosh, Wisconsin 54901 and other post offices. Membership rate for the International Aerobatic Club, Inc., is $45.00 per 12-month period of which $18.00 is for the subscription to *Sport Aerobatics*. Manuscripts submitted for publication become the property of the International Aerobatic Club, Inc. Photographs will be returned upon request of the author. High-resolution images are requested to assure the best quality reproduction. **POSTMASTER:** Send address changes to *Sport Aerobatics*, P.O. Box 3086, Oshkosh, WI 54903-3086. CPC 40612608

Aerobatics at AirVenture

BY ROBERT ARMSTRONG, IAC 6712

WELCOME, AEROBATICS ENTHUSIASTS! Here we are in July, and there's no mistaking it — EAA AirVenture Oshkosh has returned to the calendar! For most of its life, the International Aerobatic Club has been a part of the gathering held in Oshkosh every July. Many years ago when I made my first trip to what we now call AirVenture, the IAC was in a small building tucked in the woods. As small as it was, that did not affect the magnitude of the enthusiasm of volunteers welcoming all who stepped onto the porch. Two steps up to that porch brought you before a new aspect of flight and you were surrounded by others who all shared the same love for this unique area of aviation that is the world of aerobatics. As IAC grew in membership, its needs outgrew its space in that little building.

Today, the IAC Pavilion is a prime site near air show center on the north side of the entrance to Boeing Plaza. We now enjoy a much improved facility allowing for gatherings on the Vicki Cruse Educational Pavilion, as well as exhibition areas inside and out where we highlight our numerous aerobatic programs, present our special themes for the year, and honor milestone aircraft for each AirVenture. This year we feature the Giles G-200 series aircraft and its derivatives. And our trophy case is something you won't find anywhere else on the AirVenture grounds outside of the EAA Aviation Museum. In it, we display a portion of the beautiful aerobatic awards given over the years.

If you're looking for a listing of aerobatic schools or places where you might get valuable upset recovery training, just ask. In addition, our IAC Pavilion is where all of our wonderful IAC merchandise is for sale where you can shop in air-conditioned comfort!

The IAC will be conducting numerous forums during the week on a wide range of topics relating to aerobatics. These are held at our Vicki Cruse Educational Pavilion on the patio. This year we have booked presentations by Richard Giles and his G-200 aircraft, two presentations by IAC board member Jim Bourke on air show performance and aircraft, Gordon Penner on spin avoidance, Budd Davisson on buying an aerobatic airplane, Dagmar Kress, Michael Lents, Greg Koontz, and many others. All are welcome to attend, and we are only limited by seating.

Yes, the location has changed, but the volunteers staffing the IAC Pavilion still have the same enthusiasm that I saw many years ago. We welcome all with an interest or a question regarding everything and anything aerobatic.

You have no doubt heard it before — the life of any organization such as IAC is the members. So, it goes without saying that we welcome *all* who have an interest in aerobatics. You do not need to be a pilot or own an aerobatic airplane. You just need to be a little curious about this special interest in the world of aviation. We will be happy to put you in touch with one of our many chapters throughout the United States. These homes for aerobatic activity will welcome you and get you involved in local activity in no time. Of course with international as part of our name, we also have several chapters in other countries so be sure to ask about international chapters if you are one of our international members.

Our goal is to make IAC the best it can be. To do this we need to know we are working for the goals that our membership is interested in and wants. The executive director and your board members are here to serve you, the IAC members, and we need to hear from you. If you aren't sure who you should call with your questions, I invite you to start at the top and call me so I can point you in the right direction for your answer.

Happy AirVenture, IACers! IAC

▸ Please send your comments, questions, or suggestions to president@iac.org.

TOP STORY

Advanced Team Selection Rule Change Proposal

Request for input

BY DOUG BARTLETT, VICE PRESIDENT, IAC 431228

THE INTERNATIONAL AEROBATIC CLUB board of directors voted at the spring meeting to change the manner in which the IAC selects the U.S. Advanced Aerobatic Team.

A change is being made to provide an option to the IAC to place a well-qualified pilot on the Advanced team who may not have qualified at the U.S. National Aerobatic Championships. This change is being made for the Advanced team; it is not being considered for the Unlimited team at this time.

the board of directors is requesting your input regarding this change. Comments and suggestions can be made on the IAC website, and the comment period will be open until August 15. Following the comment period, the board of directors will make a final ruling on the recommended change. Any changes will be implemented at the 2019 U.S. National Aerobatic Championships in Salina, Kansas.

The current rule in *IAC Policy & Procedures Manual* Section 504.3.2.4 reads:

After the results are compiled, eight (8) pilots will be selected by IAC in rank order, without regard to gender, as qualified for the U.S. Advanced Power Aerobatic Team.

The board of directors proposes the change to read:

After the results are compiled, seven (7) pilots will be selected by the IAC in rank order. At a later date, one (1) additional pilot will be recommended by the current team members and approved by the board of directors. Any vacancies created by the resignation or removal of any team member may be filled by the recommendation of the remaining team members with the approval of the board of directors. Pilots will be selected without regard to gender.

I Am the IAC

IAC encompasses all the aerobatic enthusiasts

BY JIM BOURKE, IAC 434151

I AM THE IAC International Aerobatic Club AIRVENTURE 2019

SOME OF YOU MAY have responded to recent member surveys that I sent out as your International Aerobatic Club membership chair. Thank you so much for doing so! I learned a lot from your comments. While our members are a diverse bunch with many varied opinions, we are united by a love for aerobatic airplanes. There is no cultural or geographic divide large enough to keep us from sharing that passion in so many ways, whether it is online, at EAA AirVenture Oshkosh, or at the many IAC chapter meetings and contests throughout the year.

There are a few common threads in the responses. Many of you wish the IAC did more for people who are not interested in the competitive side of aerobatics. What about air show flying or just flying aerobatics for sport? We can do more to support our many members who join solely because they love the artistry, smoke, and power of an aerobatic flight.

This year at AirVenture we are rolling out a new campaign: I am the IAC. This program will highlight talented, interesting people who are former or current members of the IAC. Most will not be competition pilots, at least not currently.

To launch this campaign, we will be giving away free T-shirts at AirVenture. On Friday, I will give a forum presentation at the Vicki Cruse Educational Pavilion titled, "Your First Aerobatic Plane." We'll be giving away several hundred shirts immediately after that talk. All I ask is that you wear them as you walk around AirVenture. Let everyone you meet know that the IAC is EAA's aerobatic division and we are here to help anyone interested in the sport, no matter how humble their origins or how lofty their goals.

Another common theme of the survey responses is that many members find the sport too expensive. Of course, they are right, but I like to look at it a bit differently. I remember when I bought my first airplane I called my dad to complain about the cost, and he said, "Yes, but you will never regret it." That turned out to be good advice. With that in mind, instead of saying "It costs too much," I always say "It is worth the expense." Still, not everyone can afford the sport, and a lot of that has to do with the scarcity of aerobatic airplanes, the cost of insurance, and the difficulty in finding a convenient place to practice. It seems that our aerobatic friends in Europe have figured out how to create flying clubs to spread out the costs, and I'm excited to see that EAA is working on helping us with this issue in the United States. Maybe this is the solution we are all looking for. I'll keep abreast of developments in this area and pass them on.

Please do not hesitate to reach out to me at jtbourke@gmail.com with any comments you have on membership issues or the IAC in general.

The Quiz

BY JONATHAN APFELBAUM, IAC 433983

WITH EAA AIRVENTURE OSHKOSH on the horizon, your humble scribe has been reading about various maneuvers and aircraft. With that in mind, the first four questions are about a specific crowd-pleasing maneuver: the inverted ribbon cut.

1. Who was the first American to perform an inverted ribbon cut?
2. The only recorded inverted ribbon cut in a glider was performed by which pilot?
3. While a number of pilots have performed this maneuver, few have done it in more than one aircraft. Who is believed to have done inverted ribbon cuts in the most aircraft?
4. Who was the first female pilot to have performed this feat?
5. The Giles series of aircraft were featured recently. What famous air show aircraft was designed in collaboration with Richard Giles?

LOOK FOR THE ANSWERS ON PAGE 46

Thanks, IAC

BY ZACH HASKINS, IAC 440264

AS THE RECIPIENT of the 2018 Vicki Cruse Scholarship for Emergency Maneuver Training (EMT), I want to express my deep appreciation to Judy Phelps of CP Aviation in California and the International Aerobatic Club for the incredible opportunity I received.

Emergency maneuver training is something I believe can benefit any pilot, especially now that the majority of people receiving their private pilot certificate have never seen a spin from the cockpit. Even seasoned pilots with a spin endorsement in their logbook can gain skill, refine techniques, and learn something new. As an agricultural pilot, I was very keen to learn more about handling an aircraft efficiently and safely in various conditions, and this course did not disappoint. We flew in unusual attitudes, recovered from spins, flew upside down, and put the airplane into all kinds of different situations. I left this course a more competent and confident pilot and definitely had more skills when I left than when I arrived in Santa Paula a week prior.

The EMT training at CP Aviation is centered on the syllabus developed by master instructor Rich Stowell. It is divided into three modules: Stall/Spin Awareness, In-Flight Emergencies, and Basic Aerobatics. The training is conducted in CP Aviation's fleet of Citabrias and Decathalons. Judy, who is also a master instructor, is the type of instructor who combines a thorough knowledge of the course material with the ability to easily convey her knowledge to the student on the ground as well as in the air.

CP Aviation's aircraft are in great shape and very well maintained by Clay Phelps and his team. The instructors and staff are an extremely helpful, friendly, and professional group of people.

My entire experience in Santa Paula was positive from the moment I arrived until the day I left. Santa Paula Airport itself is something I wish every pilot could experience. The people are friendly, the aircraft are diverse, and the surrounding mountain and ocean scenery is downright breathtaking. I highly recommend this course and encourage others to apply for the scholarship and to take advantage of this priceless opportunity.

Zach Haskins

JUST DO IT — CONTINUED

Adventures in volunteering

BY SEAN SWEENEY, IAC 436562

IN THE MAY ISSUE of *Sport Aerobatics*, we shared the adventures of volunteering in an effort to put on an International Aerobatic Club Judges School, and the success we had. Well, as the saying goes, the story continues — we have a couple more success stories in the "just do it and volunteer" category.

Climbing in the Staudacher for our turn in the box.

On to our play day in April, hosted again by Chapter 61 and held at the West Plains Regional Airport (UNO). Using social media, emails, and text messages, we kept up the invitations and updates. More than 10 pilots RSVP'd, but with storms and 30-knot winds, only two pilots flew on the first day. Steve Johnson, who flew in from Tennessee, and I managed to get the hangar door open despite the wind and got into the flying action.

Early in the day a young man drove over to the practice day from about 100 miles away. Turns out he had met Steve at Silver Dollar City theme park in Branson, Missouri, sometime in the past. When they met, Steve was wearing an IAC shirt, and the young man struck up a conversation with him about flying. During the conversation, Steve invited him to come watch our practice day. One thing led to another, and Steve had the insight to not only invite the young man, but to keep in touch with the new aerobatic hopeful.

The young man and our new aerobatic friend, Sam, spent the entire day with us and enjoyed watching and learning about the sport. We enjoyed answering Sam's questions and encouraging his interest. Steve's excitement and enjoyment of the sport, shared at an opportune moment, led to a "maybe one day member." A great highlight about volunteering efforts and a good example of an easy way to grow our club!

Saturday cooperated with a bit of clearing, and we enjoyed the additional company of two more chapter members: Bruce Ballew and our IAC Chapter 61 president, John Housley. Winds stayed strong, but we all managed to get in several flights, coach each other, practice judging, and had plenty of time to eat, visit, and enjoy the camaraderie.

I personally find the input at play days to be invaluable. Just the discussions of the different methods used and suggestions for performance improvement make the day enjoyable and worthwhile.

As far as effort, we set a date, asked for feedback, communicated with our airport staff about their schedule, and made it happen. We provided snacks and drinks, and contacted local hotels for discounts and reserved the airport courtesy cars. The hardest part of putting together a play day is probably finding a date that works for everyone — so start early. All the resources you need are on the IAC website at www.IAC.org/chapter-resources, and the checklists are easy to follow.

Practicing judging under the watchful eyes of Bruce Ballew and Steve Johnson.

MENTOR STORIES

My aerobatic coaching with members of IAC 24

BY DAVID VALAER, IAC 439899

IN SEPTEMBER 2017, I had just flown off my 10 hours on my Pitts S-2C after doing a complete firewall-forward overhaul and had never met an International Aerobatic Club member nor done any competitive aerobatics.

Wanting to see what the group dynamics were like, I flew to Sherman, Texas, on the Sunday after the U.S. National Aerobatic Championships were completed. While looking around, I was greeted warmly by Curt Richmond who asked if the Pitts I had arrived in was mine. I replied, "Yes, I just started flying it 10 hours ago." Curt asked me if I had done any aerobatics in it. I said, "No, not yet."

David Valaer at the Texas Early Bird Contest.

Curt recommended that we walk over and meet Tony Woods to discuss advanced upright and inverted spin training. Tony said he would be willing to help me out.

David Valaer

The next week, I flew over to Tony's private airport to do the spin training in my airplane. He stressed the importance of good safety equipment. He said that wearing his flight suit and helmet had probably saved his life on one flight in his Sukhoi.

After a thorough briefing on Pitts spins, Tony went up with me for two flights. We did multiple upright, inverted, flat, and accelerated spins. I had done extensive upright spin training in the U.S. Air Force, but had never seen inverted or flat accelerated spins — what an exciting ride!

Since then, several IAC Chapter 24 members have been kind enough to provide me with coaching from the ground. It became very clear that there would be no way to win competitions at all without good ground coaching.

I have had two safe, fun, and successful aerobatic competition seasons due to the warm welcome, ongoing help, and the good friends I have made in IAC 24. I am very thankful to be a part of this group! IAC

Why Learn to Fly Aerobatics

BY JIM ALSIP

AEROBATICS IS THE MOST fun you can have in an airplane. Flying aerobatics develops stick and rudder skills and helps pilots avoid and react to emergency and unusual attitudes. Why would you not want to do that?

Flying aerobatics provides a reason to go to the airport. You need to practice, right? A typical aerobatic flight is 30 minutes or less. As you get better, the flight is still short and you just practice harder. Unlike other flying endeavors that require extended time in the air, aerobatics is very satisfying, with lots of fun in a short period of time, and you will not burn that much gas!

Flying aerobatics is not difficult, but it does require the skills of airmanship; that means using the control inputs needed, when needed, and as much as needed. Airmanship also requires using a sight picture to recognize attitude. You do not need an aerobatic airplane to learn airmanship. You can burn gas in a Cessna 172 and master steep turns, chandelles, the lazy-eight, maximum rate turns, maneuvering in very slow flight, using full aileron defections, and the Dutch roll.

Camaraderie and safety are two driving forces in the sport of aerobatics. A strong foundation of experience, instruction, and understanding is recommended.

- Begin by joining the International Aerobatic Club, a division of EAA. IAC will offer the resources to help you learn about the sport, safety, and technical aspects of flying aerobatics. Join a local IAC chapter, meet the members, seek their advice, and take advantage of their help. Visit www.IAC.org for information about membership and resources.

- Volunteer at IAC competition events. You will meet the people who make it happen, and you will be asked to join them to volunteer. Pilots and nonpilot volunteers are required in order to hold a successful aerobatic competition. Judging aerobatics can be as much fun as flying aerobatics.

- Aerobatic aircraft are usually taildraggers, so get a tailwheel endorsement and as much tailwheel time as possible.

Do not teach yourself aerobatics. Take lessons to learn aerobatic maneuvers. Ensure that your instructor is qualified:

- The instructor should be a CFI; a master CFI-aerobatic is better.

- Lessons should use a written syllabus that includes lots of ground instruction.

- Instruction should focus on the basics — lines, loops, turns, and rolls. Spins are also part of basic aerobatics.

- Initial aerobatic instruction should include recovering from unusual attitudes.

When you get serious about joining the ranks of aerobatic pilots, you will want an aerobatic airplane. There are many to choose from, and your budget will probably be a major factor in your purchase decision. I think the best-keep secret in aviation is the Pitts S-1. Very few pilots will ever develop skills that require more performance than delivered by the Pitts S-1. The Pitts S-1 is affordable to every pilot and delivers significantly more performance than the popular and much more expensive Super Decathlon. The Pitts S-1 has a reputation of being squirrely and difficult to land. Curtis Pitts said there are no squirrely airplanes, only squirrely pilots. If you have airmanship skills and a tailwheel endorsement, you will marvel at the superb performance of a Pitts S-1 during a crosswind landing.

Learn the basic maneuvers — lines, turns, loops, and rolls — from a good instructor. Get into the air, burn gas, and learn what airmanship is all about. Like getting dressed in the morning, mix and match the basic maneuvers to perform a plethora of aerobatic figures. Fly 5/8 of a loop to a 45 downline and add a half-roll — you performed the popular half-Cuban. Fly a big lazy loop and add a snap roll on the top — that is aptly called an avalance. From level, slow flight, do a half-roll to inverted and then pull really hard for a half-loop down — that is the infamous split-S.

This is all good stuff, and the subject of this month's featured video, "Learning to Fly Aerobatics." *IAC+*

▸ **FEATURE VIDEO** —Learning to Fly Aerobatics — https://youtu.be/8ob7S77zIyo

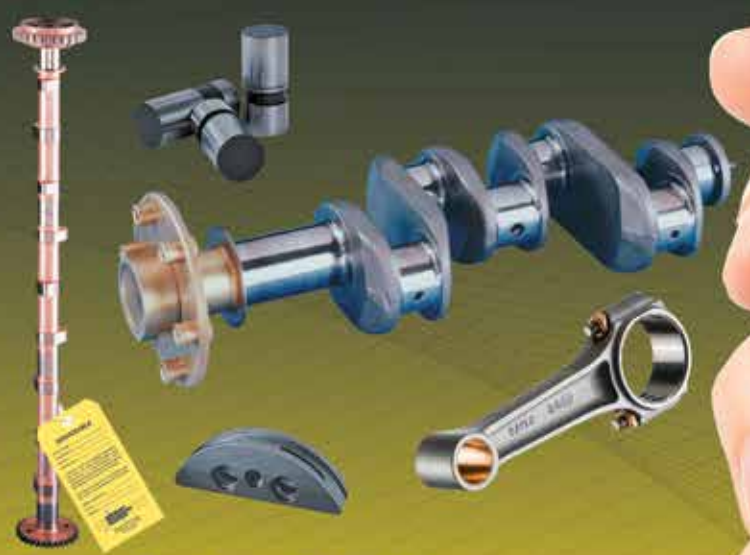
Looking right from the cockpit, the pilot sees his attitude with reference to the horizon. The airplane is on a vertical upline. What they do next is an example of the fun and variety of flying aerobatics. The pilot could use full left rudder and do a hammerhead turn; if the pilot does nothing, the airplane will come to a stop and then begin a downward tailslide; forward stick (push) on the upline and a bunch of right rudder to a vertical downline is called a humpty bump; instead of a push, the pilot can pull out of the upline into a 45-degree inverted downline and then execute a half-roll — that is called a shark tooth. So much fun, and those are just the basics!

Your One Stop for Aircraft Engine Overhaul Parts!

Serving General Aviation for Over 40 Years

- **Reconditioning of steel parts**
- **New PMA & OEM engine parts**
- **Used reconditioned parts**
- **On staff experts to help**

SEE US AT OSHKOSH AIR VENTURE BOOTH NUMBERS C3097 C3098 C3099



Order On-Line 24/7/365
www.AircraftSpecialties.aero

1-800-826-9252

2860 N. Sheridan Road, Tulsa, OK 74115
Phone: 918-836-6872 Fax: 918-836-4419

FAA DD2R764K & EASA.145.6513 Certified Repair Station

AIRCRAFT SPECIALTIES SERVICES

RAIN, WIND, AND AIRPLANE THUNDER!

Leeward Aviation Day 2019

BY HECTOR RAMIREZ, IAC 18975

We were all but washed up!

A deadly front extended from the deep gulf to the northeast, producing hail, killer tornadoes, and damaging winds the day before the scheduled event. It was too late to reschedule Aviation Day, already postponed twice in the past year. Rats! The food has been ordered, commitments made, and pilots ready to fly. The vision of staring at hopeless skies and swirling trees depressed the International Aerobatic Club Chapter 89 organizers of Leeward Air Ranch's unique flying event. No choice, let's go with it.

Aviation Day at Leeward Air Ranch has been a recent tradition sponsored by IAC Chapter 89, now running more than seven years. It's a single day of fun flying, great food, and aerobatic demonstrations that brings a flying community together to support the efforts of the U.S. aerobatic team in international competition. This year the Unlimited team will travel to Châteauroux, France, at the end of August to show the world that the United States has the right stuff to compete against the world's strongest teams, especially those from France and Russia. A weather flop would result in the loss of days of Aviation Day planning, committed funds for expenses, and could pose an unrecoverable funk for future events. And worst of all, no revenue for the team!

The next morning, sensing a short weather window, the 8 a.m. briefing produced nine brave pilots for the morning games — far short of the anticipated 15-plus aviators. Pilots registered, runway striped, and judging crew in place, a sense of urgency resulted in an early launch with the first planes in the air, well before 9 a.m. Categorized by horsepower, the first group of three competitors completed the short takeoff distance, spot landing, and short landing followed by the high-horsepower group.

A rich grouping of unique, varied aircraft populated the static display area, and voting for best in show was well underway when a surprise rain shower sent spectators running for cover, several aircraft heading for the safety of enclosed hangars, and contest officials again fretting the viability of the rest of the day's events.

As the clouds cleared, the winds picked up with a nearly direct crosswind of 12 knots, gusting to 18, with a forecast of wind speed increasing for the rest of the day. The last two pilots saddled up with a sense of hesitancy, neither pilot volunteering to be the first to takeoff. Finally Fred Weaver muscled his 65-hp Cub to the starting line and launched. From the departure threshold, I

PHOTOGRAPHY BY **BOB SCHALMER**

THE NEXT GENERATION OF AEROBATIC AIRCRAFT

EXTRA
AEROBATIC PLANES

MEET US AT
EAA AIRVENTURE OSHKOSH 2019

watched him fly sideways down the runway and it seemed to take an eternity for him to turn crosswind. Yikes, Fred seemed to be hovering, and hovering better than most of the Unlimiteds do during their 4-Minute Frees! Crap, now I have to go? Okay, insurance paid up, what could go wrong? Hard brakes, full throttle, full flaps — let's see if can yank this puppy off the ground without doing something really stupid. Made it up and around the pattern. Maybe not the prettiest landings, but definitely under control after the second or third bounce. I made it down, alive, and no bent metal! Okay, maybe a little overstated, but the adrenaline rush was real. I love it!

We finished the morning air games without incident and everybody had a great time! As we migrated to the south end of the air ranch, setup for the barbecue lunch by the volunteer staff was nearly complete. The PA system was set up by Jan and Linda Zysko and guests were gathering, but where were the hot shot aerobatic pilots?

After a few minutes of doubt, I heard an engine rumbling as Kevin Campbell taxied up to Al Burel's hangar, the headquarters for the afternoon events. Originally scheduling up to seven competition aerobatic pilots for the afternoon demonstration flights, only two more finally showed up. But they were the crème de la crème Unlimited pilots who taxied in with the swagger of Sean D. Tucker. They were Leeward's own Mark Nowosielski and his aerobatic partner from Minneapolis, Minnesota, Craig Gifford.

Nearly 140 aviation enthusiasts ravished the barbecue lunch from Brick City Southern Kitchen — unbelievably good and all provided by Foster and Paige Bachschmidt, as their extremely generous contribution to Aviation Day and the Unlimited team. For my two cents, lunch came pretty close to the best part of the day, and I should know since I don't skip too many meals!

Following lunch, the awards ceremony for the morning activity resulted in a first-place win in the short takeoff category for my 750-pound, 100-hp Just Highlander! I don't brag often, but when I do, it can get ugly. Second place went to Fred Weaver and third to Jon Meriwether.

In the over 100-hp category, Bill Bow aced the short takeoff category with Gary Winter close on his tail.

As hard as it is to believe, the entire field was smoked by Bill in his Cessna 172 as he made a direct hit on the touchdown line to take the first-place trophy in the spot landing venue. Bill was followed closely by Jeff Abrams in his tricked-out clipped wing Cub (maybe next time use your helicopter, Jeff). Third place went to Gary.

Jeff redeemed himself in the short landing category, taking home the Big Kahuna first-place trophy. Fred Weaver was right there with a second-place finish, and I eked out third place. What a great morning, salvaged from the clutches of weather defeat; it doesn't get better than this!

After the final tally, best in show went to Mike Peters' exquisite *Alabama Girl* Nanchang CJ-6. Ralph Sebexen's classic Champ lost by one measly vote. Bring more family or friends to vote next time, Ralph!

As fun as the morning was, the real flying was the aerobatic demonstration in the afternoon. The crowd was introduced to the finer points of aerobatic flight as Kevin Campbell performed Advanced sequences, enhanced with a little smoke and a knife-edge flyby. Kevin, maybe air shows are in your blood!

Mark and Craig mesmerized the crowd with their precision Unlimited Free Unknown sequences and 4-Minute Free air show-like routines. I get a -10*g* headache just watching all of the high-speed pushes and complex figures flown. We really get a tremendous appreciation of their dedication, hard work, and proficiency as they make extremely difficult flying look so effortless. No doubt, both of them will represent the U.S. extremely well at the highest level of international competition. Having them fly at Aviation Day was, without a doubt, the crowning glory of the day.

All in all, Aviation Day at Leeward turned out to be a huge success, despite the rocky start. As a result, generous donations will be provided directly to all seven of the competing U.S. Unlimited pilots and team manager from our Aviation Day activities. A big thank-you to all of the attendees, participants, volunteers, support staff, Chapter 89 members, and airport management for making Aviation Day and the demonstration aerobatic flying possible.

Special thanks goes to our judging staff, including chief judge Joel Nussbaum and his line judges: Ed Sterba, Bill Moore, Bill Thorup, and Dick Dayton. In the background, a lot of the initial footwork was provided by chapter president Kevin Campbell and chapter member Laurie Ramirez. Many others provided needed support, including Tangie Campbell, Pete Eslick, and Liza and Fred Weaver. Nonchapter volunteers stepped in to help, including Bill Bow, Erma Sebexen, Judy Bingham, Leslie Wilson, and others who made the job of administering Aviation Day a delightful event. Of course, a big thank-you to the pilots, families, and attendees for supporting our cause and sharing a wonderful day.

May the U.S. Unlimited aerobatic team kick some serious butt in France! We are cheering you on and know you will give it your best effort! Best of luck from Leeward Air Ranch! Bring home the gold! IAC

LIFT AVIATION

EXPECT MORE
FROM YOUR FLIGHT HELMET

SEE YOU AT
EAA AIRVENTURE
OSHKOSH
2019
441

AV-1 KOR
PILOT HELMET

Koroyd

BUILT WITH
KOROYD LINER

LIFTAVIATIONUSA.COM

LIGHTER
A honeycomb construction allows Koroyd to have significantly less mass making it 22% lighter then standard EVA foam.

STRONGER
Koroyd absorbs and disperses impact energy, reducing strike forces by 32% over standard EVA foam.

VENTED
Koroyd is hollow by design allowing for 360 degrees of air flow ventilation.

Built for pure aerobatic capability, the Giles G-200 is still a very smart kit-plane, making use of high-tech materials and common-sense design.

PHOTOGRAPHY BY **DAVE GUSTAFSON**

GILES G-200

OPPORTUNITY AND INNOVATION

BY RACHEL ASHLEY

SELF-MADE AVIATOR

Richard Giles' G-200 may have taken its first flight in 1994, but he was designing and flying airplanes long before that.

Richard Giles took his childhood education very seriously. In fact, he's been designing airplanes since elementary school. When you're on a limited budget (and limited experience), the only way to get a wrecked RC airplane back in the sky is to rebuild it from a heap of balsa into something brand new.

Richard can't remember a time when he didn't love airplanes. He knew it was so from a very young age — preschool, maybe — after his father started driving Richard and his siblings to the local airport in Louisville, Kentucky, where he grew up. There, they would sit on a grassy hill together and watch the planes come and go.

EARLY INFLUENCES

Richard's father wasn't a pilot, but he still encouraged him to explore the world of aviation.

RC models were his first love: P-51s, Corsairs, and other World War II airplanes. But when they didn't all come back in one piece, sometimes models like Cubs would turn into something unrecognizable. Richard said he's always had an aptitude for identifying the differences in models, and he was determined even as a young boy to discover the recipe that made flight possible. That's when he started designing his own planes, and it's where his career first started.

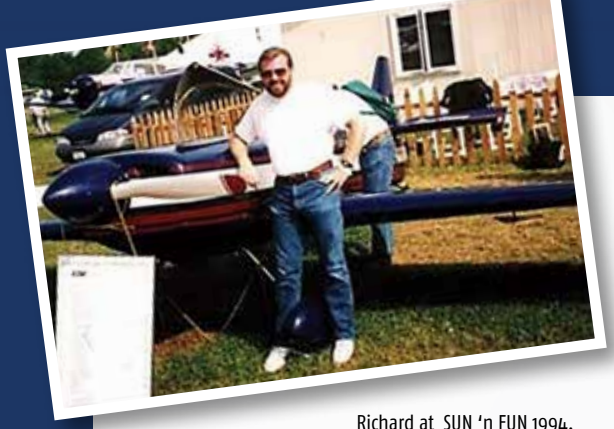
In early high school, Richard took his first plane ride at the age of 12 with his friend's father, Cal Johnson, who was a WWII aviator from Louisville who encouraged Richard's interest in aviation early in his life.

Richard with his wife, Jeanie, and their son, Andy.

"To this day, I can still remember the sensation when the wheels left the ground at Bowman Field," Richard said. Cal, who worked in sales, would use his plane to cover his sales territory and was a strong mentor to Richard. He often allowed Richard to accompany him on trips in his Piper Comanche.

It's been 100 years since the first plane landed at Bowman Field, which was home to Kentucky Flying Service, where Richard bought his first flight lesson on June 6, 1966. It was also the home airport of the Soucy family. At the time, Gene was a couple years older than Richard, but he remembers being inspired by Gene, who had his certificate and was already flying in air shows.

Richard got a job working as a lineman at KFS, where he'd spend hours looking at the Soucy planes, trying to determine the subtle differences between them. Little did he know this unique gift for visual analysis would pay off later in his career.



Richard at SUN 'n FUN 1994.

THE GREATEST AMUSEMENT PARK RIDE

Eager to learn, he completed all of his ratings before he even finished high school. Laughing a little, he recalled the moment when he purchased his first airplane. With only nine or 10 hours in his logbook, he and a couple of friends combined their cash to purchase a Luscombe 8A for just $2,100.

"One day my instructor said, 'I know you're going to get out there and start playing around, so I'm going to teach you how to do spins because I want to keep you alive,'" Richard recalled. "That was the greatest amusement park ride I'd ever been on."

After a short lesson on spins, his instructor asked him to land and go back up to practice on his own. But this solo practice wasn't because his instructor trusted him, he later learned. It was because spins made his instructor sick.

Not Richard. He was hooked forever on aerobatics.

Bowman Field was one of the best places to be if you loved aviation. It's rich with history, being one of the busiest airports in the country during WWII. It also has ties to Glenn Curtiss and multiple aerobatic pilots. But when it was time for Richard to go to college, he had to leave Louisville behind.

He was a business administration major with a math minor at the University of Tennessee at Chattanooga, something he emphasizes when he talks about his aircraft design career. His desire to learn was seemingly insatiable. Richard wanted to know more about aerodynamics, so he started reading, he said a little sheepishly. Over the next couple of years he had devoured all of the classic texts on the subjects of aircraft design, fluid dynamics, structures, and other topics that normally make up an aeronautical engineering curriculum.

Learning to fly aerobatics was no different. "In the early '70s, I bought the books by Duane Cole," Richard said. "His books were designed in a way to help you teach yourself aerobatics. A lot of people would cringe at that today, but that's what they were and that's how I used them."

Even if it wasn't today's preferred method of learning, books were one of the few resources Richard had available to him in those years. There was only one instructor near Richard's college who taught aerobatics, and he would come to the flying club at the college and teach in the club's Citabria, where Richard learned his first rolls and loops.

By the time he finished college in 1974, he was probably as deep into his aerobatics education as he was his business administration degree. He had also joined EAA in 1972 and the International Aerobatic Club in 1973, and he'd been to EAA Oshkosh several times. He even attended judges school, which he notes was back when classes would visit the airport and observe flight as part of the training.

In many ways, those formative college years set Richard up for both career paths he would take after graduation. Before he finished school, he began building his first airplane: a Pitts S-1C. And, like many Pitts builds do, it made its way into his home. The fuselage on the garage floor, the wings in a bedroom. It was still under construction — nowhere near finished, he said — when he got his first job as a corporate pilot working for a local Chattanooga company where he flew right seat in a King Air.

The nearest IAC chapter, Chapter 3, was located in Atlanta, Georgia, a little over an hour away. Richard was growing impatient with the S-1C build, so he and a friend decided to buy an S-2A together from Pitts dealer and former IAC president Carl Bury (1978-1981).

With two Pitts in the family (and starting a real family of his own), he began to take note of the aerobatic environment in the way he always did: with a careful, analytical eye.

INSPIRED BY A LASER 200

Leo Loudenslager had recently completed his Stephens Akro build, an aerobatic monoplane that some called "radical." And because it was something unheard of, it was grabbing the attention of aerobatic pilots across America, including Richard Giles.

But Leo wasn't done with it yet. In just a few short years, he modified it with a new forward fuselage, wings, tail, and cockpit. The aircraft that returned to the aerobatic scene made an impact no one will forget, and Leo went on to win seven times in the U.S. National Aerobatic Championships, as well as the 1980 World Aerobatic Championships.

The aviation climate was ready for innovation in aircraft design at the time, and Richard saw an opportunity.

"I started to see that monoplanes were ruling the European aerobatic scene, and I could see the writing on the wall — it would happen here, too," Richard said. He had also been competing in the Pitts and was ready for a more affordable, Unlimited-capable option.

He wanted to mimic the plane Leo had created. Recalling his childhood building experiences, he hit the books to begin planning his build.

After all, captain, he's a pilot, not an engineer.

PHOTOGRAPHY COURTESY OF **RICHARD GILES**

"I was aware that we basically got our butts kicked by the Zlins and not long after that the Yak-18s and Yak-50s and the Europeans with their monoplanes. As Americans, we thought we got cheated," Richard said. "But the thing that I noticed was the grace of the monoplanes, the symmetry that they presented to the judges. You know, judging a Pitts is like judging a football."

In 1976, just one year after the Laser 200 emerged, Richard put down on paper his first drawing of the Giles G-200. There were only two significant changes to the design after that 1976 concept was committed to paper; the airfoils Richard first saw at the WAC 1980 and a change from steel tube and wood construction to carbon fiber monocoque structure.

While Richard was in Oshkosh for the 1980 World Aerobatic Championships — the year that Leo won — he couldn't help but notice a small design feature on the French pilots' CAP 21s: new blunt-nosed, slab-sided airfoils. Not being able to find data on the airfoils, he began questioning every theoretical aerodynamicist he could find and even wrote to several who were well known in the world of EAA. By chance, he met Ray Mort who not only had seen the CAP 21, but also understood how and why the airfoil worked so well for aerobatic aircraft. Not only that, Ray had already designed a wing using them. Ray was enthusiastic about the G-200 design and provided the coordinates for its airfoils — the only significant aerodynamic change in the design before the first G-200 was built in 1994.

One of the problems that plagued the Stephens Akro and Laser monoplanes was cracking of the wood main spar. Richard carefully read an engineering white paper that detailed a carbon fiber wing designed and built to the Laser specs, but while excited by the structural advantages, the cost at that time was totally prohibitive. It wasn't until the 1990s that carbon materials came into the small aircraft and homebuilt arena. Borrowing from Lance Neubauer's concepts and employing Martin Hollmann to do the layup schedules, the G-200 became the world's first all-carbon fiber aircraft.

Richard knew what all Pitts owners knew — that the Pitts was superior in many ways to planes like the Laser and the Zlin — so his idea was to design a monoplane that had the performance of a Pitts S-1 with the presentation of a monoplane.

The difference between the aerobatic climates in the United States and Europe was undeniable, and it was perhaps the most influential part of Richard's G-200 design: the desire to put a real competitor in the Unlimited ring from the United States. According to Richard, the trend in Europe was to purchase factory-built aerobatic planes, but in the United States, the scene was more grassroots. Nearly everything in the aerobatic community in America was homebuilt.

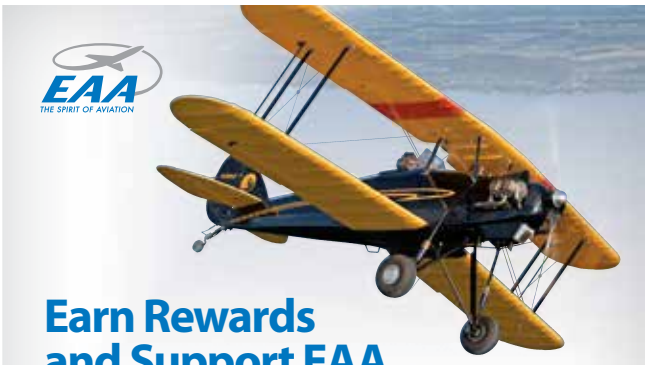
"I had several friends in the EAA, so the whole homebuilt mentality was deep in my psyche," Richard said. This

www.gamecomposites.com

GB1 GameBird

Fun Flying!
- FAA Type Certified
- Made in the USA

Game Composites, 3201 SW I Street, Bentonville, 72712 AR
info@gamecomposites.com



EAA
THE SPIRIT OF AVIATION

Earn Rewards and Support EAA

with the EAA Cash Rewards Visa Signature® Card!

Stop by any EAA Visa location at AirVenture to learn more. Plus, get a FREE gift for applying![1]

EAA Cardmembers, stop by for your FREE gift![1] Use your EAA Visa Card while at AirVenture 2019 and bring your EAA Visa Card, along with your receipt(s), to any EAA Visa location on the AirVenture grounds.

1. Non-cardmembers will receive one free gift for each completed application, while supplies last. Cardmembers must present their U.S. Bank EAA Visa Card and AirVenture 2019 receipts at the U.S. Bank table in order to claim their free gift. Limit one free gift per Cardmember while supplies last. Offer valid 7/22/2019– 7/28/2019.

The creditor and issuer of the EAA Cash Rewards Visa Signature Card is U.S. Bank National Association, pursuant to a license from Visa U.S.A. Inc.
© 2019 U.S. Bank National Association

G-200 with the G-202 kit in front.

homebuilt mentality was why he wanted to present the G-200 as a kit and not a factory-built airplane. Thus, AkroTech was born in 1994, and the very first G-200 kit was built right there in AkroTech's shop.

THE CRITERIA FOR A GOOD AIRPLANE

Richard had an unforgettable first flight in the G-200. It was his daughter's birthday: March 7, 1994. A brand new design, a brand new airplane.

"I knew it would fly because it had all the criteria for a good airplane," he said. "How well it flew was the exhilaration." That same year, the G-200 made its red carpet debut at SUN 'n FUN International Fly-In & Expo.

Several other writers and enthusiasts have marveled at the incredible technical abilities and makeup of the G-200. To name a few, the carbon fiber airframe, the unbelievable roll rate, the unique position, and the visibility of the pilot. But Richard believes he failed at creating the competitor he originally imagined. It had straighter lines than the Pitts and was easier to judge, he said, but it was still smaller than an Extra or an MX. Its empty weight was only 800 pounds. And so it was difficult to compare it to and judge it against its larger Unlimited competitors.

In addition to the G-200, three additional designs from Richard have been built and flown: the G-202, the G-300, and Wayne Handley's famous G-750 Turbo Raven. The G-100, G-302, and an F1 racer are still waiting.

Wayne, who piloted the G-750 Turbo Raven in air shows, broke the world record in 1999 for most consecutive flat spins in the G-202, a record he held until 2016.

Wayne once had his crew time three rolls in the G-200. When he finished, he was surprised to hear that he'd actually done four rolls, not three, and in only two seconds. That's approximately 720 degrees per second.

"The G-750 Turbo Raven was Richard's best achievement. Its time-to-climb records are more significant than the spin records," Wayne said. "I had to limit my practice flight because it would roll so fast it made me sick."

But it wasn't always high flying and celebration for AkroTech. Richard grew somber when he spoke about AkroTech closing its doors for financial reasons.

"I'm not bitter or morose about it," Richard said. "There are so many aviation businesses that fail. I knew that not only was I deeply financially impacted, but I knew other people were hurt by the failure of the business, too." Although Richard said they weren't properly funded, he clarified that AkroTech never went bankrupt. "In hindsight, I should never have attempted the business without adequate financial backing and capital investment."

Upon closing, Richard sold the G-200 and G-202 molds, tooling, and inventory to Chris Meyer, who started MX, but he retained the rights to all of his designs. He also retained all the G-300 molds, tooling, and inventory.

Despite this loss, there are still several Giles aircraft powering through the skies around the world today. The prototype is alive and well in Australia. Richard vows if the owner ever sells it, he will insist upon its return home to Oregon.

Richard will also be at AirVenture 2019 where he will facilitate a forum and take part in a reception honoring the 25th anniversary of the Giles G-200.

He graciously expressed gratitude to several contributors and supporters of the G-200 and its creation — a long list of names, some of which included Len Fox, Phil DeTurck, Chuck Harrison, Steve Ruege, and several other names of people who traversed the highest and lowest points of the journey alongside him, with both direct and indirect impacts on the G-200's accomplishments.

Richard is still hanging out in Oregon, where AkroTech was formed. He's a corporate pilot, going on some great adventures, doing the job he'll never stop loving, as long as he gets to play in the sky. IAC

G-202 prototype.

PHOTOGRAPHY COURTESY OF **RICHARD GILES**


IT DOESN'T MATTER WHAT YOU SEE;
YOU JUST HAVE TO SEE IT FOR YOURSELF.
EXPERIENCE OSHKOSH
WORLD'S GREATEST AVIATION CELEBRATION®
CELEBRATING
50
YEARS IN OSH
EAA AIRVENTURE
OSHKOSH
2019
JULY 22-28
BUY NOW & SAVE!
EAA.org/Experience
Photo by Art Eichmann
© 2019 EAA

PHOTOGRAPHY COURTESY OF **EAA ARCHIVES**

Celebrating IAC Memories at AirVenture

BY LORRIE PENNER, IAC 431036

THE AEROBATIC DIVISION OF the EAA, first called the "Precision Flying Division," became the International Aerobatic Club (IAC) in 1970 under the leadership of Bob Heuer, an airline pilot from Maple Park, Illinois, and a group of aerobatic pilots mostly from the Chicago area.

The very first year after the IAC was formed, its membership exploded to more than 1,000. Many of those members were air show pilots who performed in the early years at AirVenture.

The following collection of photos include many IAC members who made significant contributions to aerobatics and were later inducted into the IAC Hall of Fame.

IAC and its members have been proud and honored to be a part of this annual gathering of aviation enthusiasts that is the "World's Greatest Aviation Celebration."

Top: Left to right, Paul Poberezny (IAC 1), John Gosney, Bob Lyjak, Duane Cole, Carroll Dietz, Gene Soucy, Marion Cole, and Bob Heuer (IAC 2).
Photo courtesy of EAA Archives

Middle Left: Beverly "Bevo" Howard, the first to perform an outside loop in a light plane, a stock 37-hp J-2 Cub. In 1964, he accompanied the U.S. Aerobatic Team to Spain as its team captain.
Photo courtesy of EAA Archives

Middle Right: Tom Poberezny joined the U.S. Nationals Unlimited Aerobatic Team, which won the team medal in the 1972 World Aerobatic Championships in Salon, France. In 1973, he was the Unlimited category champion at the U.S. National Aerobatic Championships.
Photo courtesy of EAA Archives

Bottom: The IAC Championships, formerly known as the EAA Aerobatic Contest, was first held in Fond du Lac, Wisconsin, just 20 miles from the then newly relocated EAA Fly-In site in Oshkosh.
Photo courtesy of EAA Archives

Top Left: Robert "Bob" Heuer at the microphone, with (left to right) Martha Heuer, Herb Cunningham, Sam Huntington, Roscoe Morton, Paul Soucy, Marion Cole, and Tom Poberezny.
Photo courtesy of EAA Archives

Top Right: Acro Sport tail number N1AC. The biplane was designed by Paul Poberezny and built by EAA Aviation Museum personnel and volunteers in 1971.
Photo courtesy of EAA Archives

Middle: Harold Krier's Super Chipmunk. Harold was the U.S. National Aerobatic Champion in 1965 and 1968.
Photo courtesy of EAA Archives

Bottom: Bob Herendeen was the first person to fly a Pitts Special in a World Aerobatic Championship in 1966 in Moscow.
Photo courtesy of EAA Archives

Top Left: Marion Cole became a member of the U.S. Men's Aerobatic Team in 1968, flying a Bücker Jungmann at the World Aerobatic Championships in Magdeburg, East Germany.
Photo courtesy of EAA Archives

Top Right: Tail number N4734C is a 1957 Boeing B75N1. It belonged to the Kendall Flying School in Miami, Florida, in the 1960s. The flight school was originally co-owned by aerobatic champion Mary Gaffaney.
Photo courtesy of EAA Archives

Middle: Left to right are Art Scholl's Chipmunk, three Pitts belonging to the Red Devils (Charlie Hillard, Gene Soucy, and Tom Poberezny), Duane Cole's Taylorcraft BF-50, and Pete Myers' clipped wing Cub.
Photo courtesy of EAA Archives

Bottom: Gene Soucy, member of the 1970 and 1972 U.S. Unlimited Aerobatic Teams and three-time U.S. National Aerobatic Champion, with his Grumman Showcat biplane.
Photo courtesy of EAA Archives

Top: Marion Cole with Curtis Pitts, taking delivery of a new factory-built S2A.
Photo courtesy of EAA Archives

Middle: Tail number N258H, a 1968 Bu-133 Bücker Jungmeister replica. The plane belonged to Sam Burgess (IAC 23), who flew it around the lower 48.
Photo courtesy of EAA Archives

Bottom Left: A beautiful Pitts S-1, N3515.
Photo courtesy of EAA Archives

Bottom Right: Marion Cole and Pete Myers watch as their fellow air show performers thrill the crowd at AirVenture.
Photo courtesy of EAA Archives

Top Left: Bob Lyjak was an early supporter of EAA and IAC from Ann Arbor, Michigan. He flew this Waco Taperwing annually at the air shows in Rockford, Illinois, and Oshkosh, Wisconsin.
Photo courtesy of EAA Archives

Top Right: Terry Tubb, center in light jumpsuit. The red Pitts Special belonged to Bob Davis and then Vern Jobst. Jim Lacy, IAC 6, is kneeling in front of his plane, N310L.
Photo courtesy of EAA Archives

Middle: Fond du Lac for the IAC Championships, which would later be known simply as "Fondy."
Photo courtesy of EAA Archives

Bottom: Mary Gaffaney achieved many aviation goals, including being the first woman to win gold medals in the 1970 and 1972 World Aerobatic Championships.
Photo courtesy of EAA Archives

Top Left: Art Scholl and Gene Soucy. Art was a member of the U.S. Aerobatic Team in 1968, 1970, and 1972. In 1974 he became the U.S. National Aerobatic Champion.
Photo courtesy of EAA Archives

Top Right: The Art Scholl Chipmunk, serial No. 116-154, was built as a DGC-1 at the de Havilland Canada factory. Art used this and another modified Chipmunk that he renamed "Super Chipmunks." The FAA registration numbers are N13A and N13Y.
Photo courtesy of EAA Archives

Middle: A very young Gene Soucy, 1968 National Advanced Aerobatic Champion, visits with a fan. Gene would later earn the titles of three-time U.S. National Aerobatic Champion and three-time Canadian National Champion.
Photo courtesy of EAA Archives

Bottom: Marion Cole was founder of the original Red Devils Aerobatic Team, acting as the lead pilot with wingmen Gene Soucy and Bob Heuer from 1969 to 1971.
Photo courtesy of EAA Archives

Top: Gene Soucy takes time for a haircut during his time off from air show flying.
Photo courtesy of EAA Archives

Middle Left: Bob Herendeen admires Bill Dodd's airplane. It was one of the first S1S productions off the line from Curtis Pitts' factory in Homestead, Florida.
Photo courtesy of EAA Archives

Middle Right: Harold Krier, who represented the United States at the World Aerobatic Championships in Spain, Russia, and Germany.
Photo courtesy of EAA Archives

Bottom: Paul Soucy's Senior Aero Sport, the two-seat version of the original PJ-260.
Photo courtesy of EAA Archives

Top Left: Charlie Hillard in the "Krier Kraft." Charlie was active in the U.S. National Championships from 1964 to 1972, winning the title of National Champion in 1967.
Photo courtesy of EAA Archives

Top Right: Frank Price, who was the single competitor for USA at the 1960 World Aerobatic Championships, is seen here standing by N442X, an airplane used by the Red Devils team.
Photo courtesy of EAA Archives

Middle: The Red Devils Aerobatic Team at AirVenture Oshkosh.
Photo courtesy of EAA Archives

Bottom: A prototype from American Champion, tail number N5143T. The 1968 Champion Pro, with symmetrical wings, 180 hp, and a constant-speed prop, was a one-of-a-kind experimental parasol version of the Citabria.
Photo courtesy of EAA Archives

The Humpty Bumps

Dealing with gyroscopics

BY GORDON PENNER, IAC 429704, FAA GOLD SEAL CFI, THREE-TIME MCFI-A, REGIONAL JUDGE

NEWER PEOPLE TEND TO incorrectly think of the humpty bump as a maneuver that is too advanced for them — I disagree. It is, however, the first time that a new aerobatic pilot has to deal with propeller gyroscopics in a big way. In the end, it is well within the capability of the new Sportsman pilot. It is also well within the capability of a Citabria, a 150-hp Decathlon, or a similar-performing aircraft. Mostly, it is a great maneuver for a freestyle sequence.

I strongly encourage all Sportsman pilots, even new ones, to create a freestyle sequence. See "Free Program Design" by Doug Jenkins in the February 2018 issue of *Sport Aerobatics* about this. Designing a freestyle sequence allows a pilot to get rid of having to do a full loop, which always suffers heavily under the judges' pens (see Chapter 6 in the *IAC Official Contest Rules*). I always have a humpty in my freestyle. I am only going to cover humptys that go up. Down humptys require different techniques.

British champion Alan Cassidy, in his landmark book *Better Aerobatics* (2003), said the humpty "is the ideal platform for learning more about ultra-low-speed handling, balance, and elevator management."

First, we have to get past the slang terms. These terms for the different kinds of humpty bumps (which in itself is a slang term!) just describe what the pilot is doing with the pitch control for each of the three looping segments, or partial-loops. A pull is a positive *g* maneuver (blood going to the pilot's feet), and the push is a negative *g* maneuver (blood going to the pilot's head).

The pull-pull-pull humpty means starting in upright level flight, followed by a pull to an uphill vertical or 45-degree line, a pull to an inside half-loop, a vertical or 45-degree downline, then a pull to level. A pull-push-pull humpty means a pull to go uphill, a push over to a half outside-loop, a downline, and then a pull to level. A push-push-push humpty starts inverted, then has a push to uphill, a push for the half outside-loop, and then a push back to level inverted.

Figures 1 and 2 are examples of what we are talking about. Remember, when reading Aresti symbols you start at the dot and end at the short, perpendicular cap line. The first symbol presented here is a pull-pull-pull humpty. The second is a pull-push-pull humpty. The pull-push-pull is the one I normally use in my freestyle.

For those of you who are new, don't be distracted by the arc symbols on the up- and downlines. Those arcs are where optional rolls can be placed, as indicated by the vertical equal signs next to the arcs. The rolls can be any multiple of 90 degrees. If you decide to place a roll on a line it must be centered on the line.

Putting a quarter-roll on one of the lines is an excellent way to use the y-axis. Low horsepower airplanes should just put rolls on the downline. A quarter-roll or half-roll on the downline of the humpty is within the capability of the Citabria or the 150-hp Decathlon, but watch your airspeed redlines. If no roll is inserted in those places, the arc symbols don't appear in the final drawn version of the symbols in an actual flight sequence.

In the Aresti catalog, humptys are actually called combinations of lines, angles, and loops,

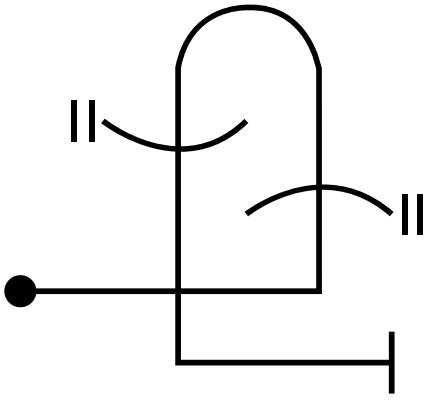


Figure 1

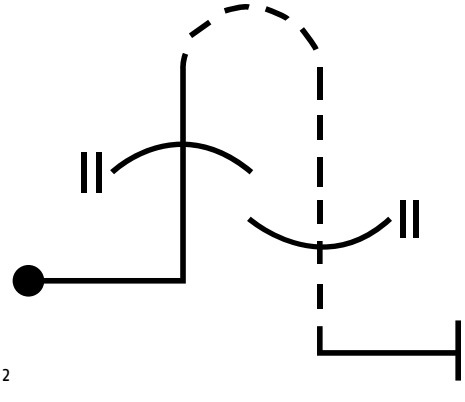
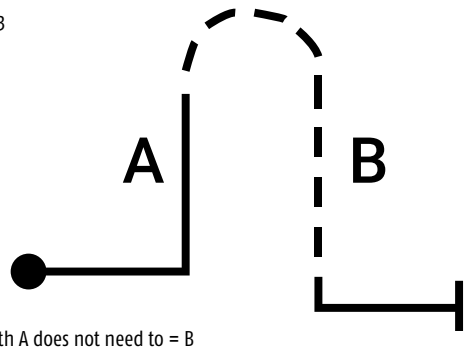
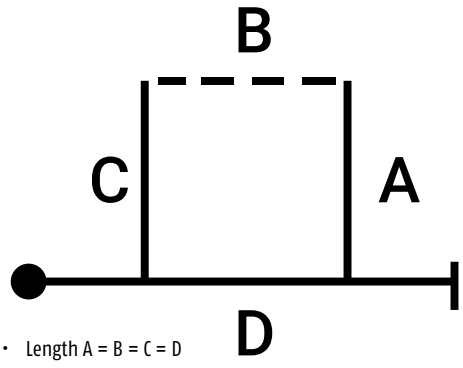


Figure 2

Figure 8.4.3



• Length A does not need to = B



• Length A = B = C = D

and are Family 8 figures. Chapter 8 of the IAC rulebook covers the criteria for humptys.

In paragraph 8.4.1(c), under the heading of Straight Lines, the rulebook says that the length of the up- and downlines in a humpty bump do not need to be equal. Figure 8.4.3 shows this.

Paragraph 8.4.3 Comparing Part-Loop Radii, or curves, describes when the part loops within a maneuver have to all be the same size, and when they do not. The three humpty radii do not have to be equal to each other. As an aid to helping figure out the radii conundrum, the rulebook gives you Figure 8.4.8 Comparing Part-Loop Radii. Even in a double humpty none of the radii have to be the same size.

Now we will 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 looping segments are judged by the trajectory of the CG "dot" of the aircraft. That means the half-loop must be completed directly across from the point where it began. If the half-loop segment finishes after, or lower, than that beginning point, it is called "finishing late," which is a downgrade.

Since the speed of the aircraft is changing quite a bit throughout the half-loop on top (quite slow at first while pointing uphill, then faster and faster on the downhill portion as the nose of the airplane seeks the center of the Earth) the pilot must increase the pitch rate throughout to match those speeds. By pitch rate we mean how fast or how many degrees per second the nose is moving toward the pilot's head or toward the pilot's feet.

That is precisely where the difficulty comes in. Considering just the pitching, the first part of the half-loop is slow, whether you are pushing or pulling. As a result, the pitch rate is low to keep drawing the shape of the half-loop. Make sure that you enter the maneuver with enough speed to perform the upline *and* the beginning of the half-loop. Round it out. Don't sag or mush! In the second half of the half-loop, the airspeed is increasing, so the pitch rate must be increased with it to continue to draw a constant radius.

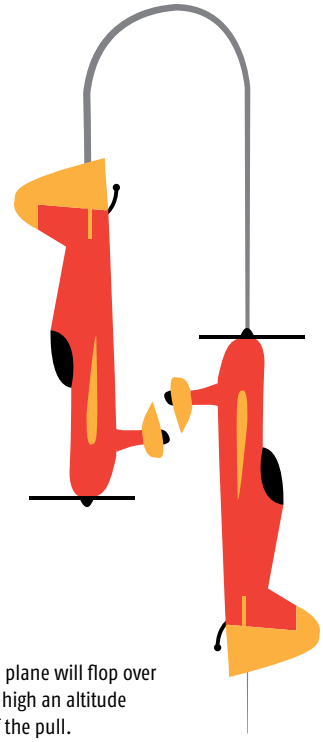
Now comes problem No. 2. As you push or pull faster and faster in the latter portion of the half-loop, the gyroscopic forces of the propeller induce a greater and greater yaw force. You are at full power at this point so the gyroscopic forces from the propeller are strong. The yaw then induces a roll due to yaw-roll coupling. A pull gives an uncommanded right yaw. A right yaw will then give an uncommanded right roll. These forces conspire to pull the aircraft off course. The nose of the aircraft must stay on the x- or y-axis "in plane" throughout the half-loop, and it must not have a low wing.

As for the yawing, there won't be much initially when the pitch rate is low. The required rudder will not be much different than needed to prevent a low wingtip when on the uphill line. However, when on the down side of the half-loop with an American engine, as more and more speed is gained more and more left rudder will be required on an inside half-loop.

According to former IAC president Rob Dorsey you can push an outside half-loop at a slower speed than you can pull an inside half-loop. That makes sense because the airplane's apparent weight is lower with a push and higher with a pull. Lower apparent weight requires less speed to fly and maneuver.

I tried it, and it is true.

I like the humpty with the push on top, especially with a low-powered aircraft. In this case, more and more right rudder is required as the rate of pushing is increased in the second half of the outside half-loop. At slow speed after the top of



FINISHING LATE: If the pull is too late, the plane will flop over the top of the maneuver and finish at too high an altitude when compared to the starting altitude of the pull.

the pull-push-pull humpty, I had to have almost full right rudder to cancel the propeller's gyroscopics in my old 150-hp Decathlon. Ground coaching will help you find when to begin the half-loop. No sagging or mushing, please.

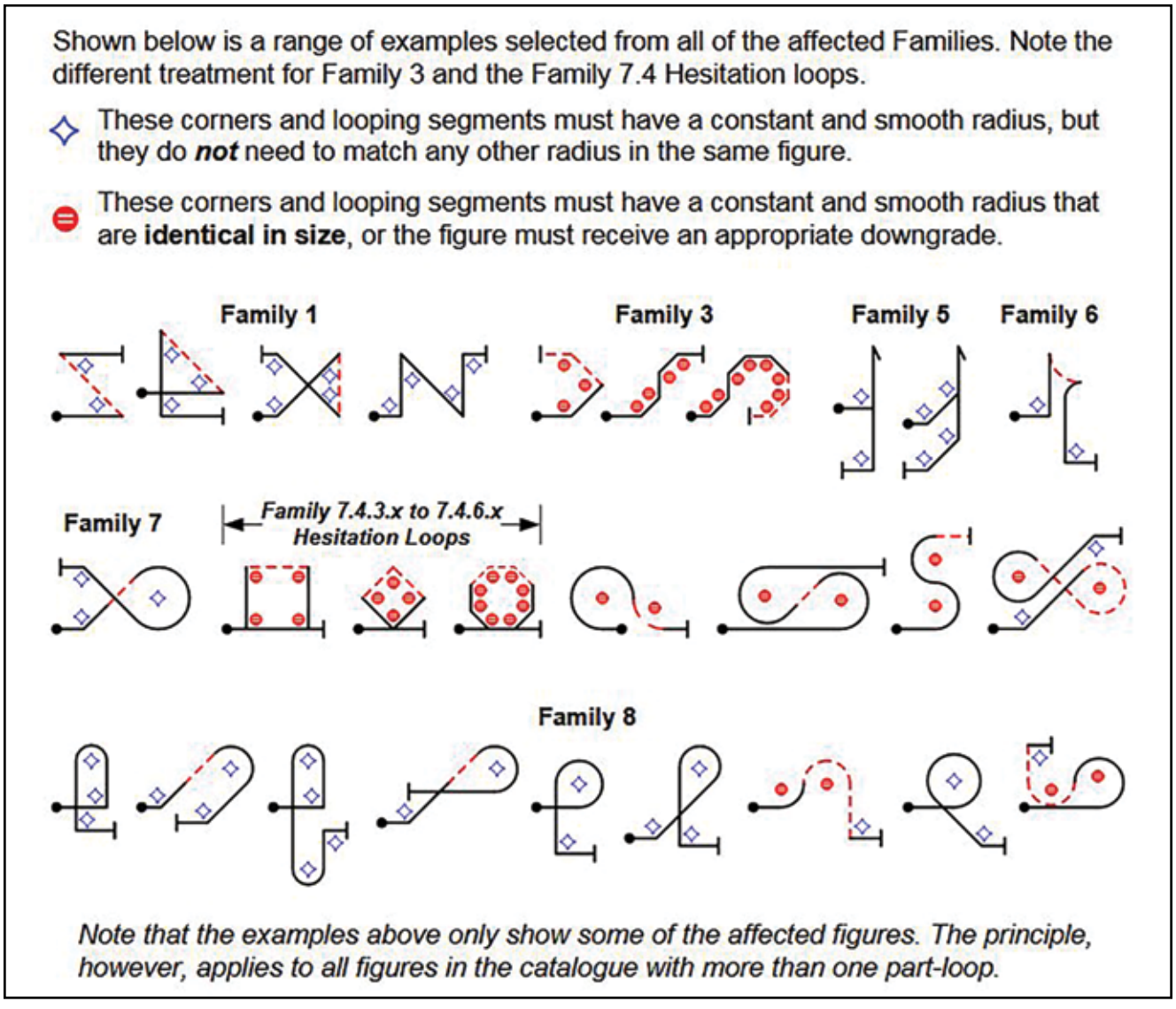
I placed a pull-push-pull humpty in all my free-styles, and put a quarter-roll or half-roll on the downline. A 2-Xx8 or a 2-x4 can be also be used. I use this as a high-energy way to go from one axis back to the other axis with a lot of smash (energy) being fed into the next maneuver. Since I can push slower than I can pull, I can get just a few more vertical feet before the half-loop in the push humpty. A quarter-roll or half-roll on the downline also makes a nice heading reversal, but watch your airspeed redlines!

Remember, do not begin the half-loop at too slow a speed, especially on an inside half-loop for the pull-pull-pull humpty. You simply must have enough energy to not only draw the half-loop; you must also have enough energy to control the aircraft attitude while doing it.

The humpty is a fun maneuver that doesn't take a lot of practice to do well.

Fly safe! IAC

Figure 8.4.8



TWO WAYS

to make your mark

Holloway Ladies' Avenger Short-Sleeve Polo
Price$49.99.

Fremont Powerbank Portfolio
in Heather grey. Price $65.00

Shop the IAC Pavilion during AirVenture for great merchandise

IAC UNLIMITED COLLECTION AVAILABLE AT WWW.IAC.ORG/STORE

IAC
INTERNATIONAL AEROBATIC CLUB
EAA
™

Flying That First Aerobatic Passenger

It's all about them, not us

BY BUDD DAVISSON

CLOSE YOUR EYES AND try to remember what your first aileron roll looked like and what effect it had on you. Try to recall the incredibleness attached to seeing the horizon lazily rotate right in front of you while your body doesn't feel a thing. Try to remember the way your brain literally exploded, "Oh, holy crap! Look at that! Will you look at that! I don't believe it!"

Back with us? Incredible wasn't it? The first roll, that is. It was like nothing you'd ever experienced before. A truly new visual sensation that, if you live to be a thousand, you'll never forget. A simple, 1*g* exchanging of sky for ground, ground for sky maneuver. It was nothing fancy. In fact, from the pilot's point of view, it was probably a little ho-hum. It certainly didn't show what an incredibly skilled pilot he is. And that's exactly the way it should look to him. As totally off-the-scale as it looks to the passenger the first time, that's exactly how mundane it should feel to the pilot. In that kind of situation, the passenger can't wait to do it again. And that should be our goal every single time we take someone up on their first aerobatic ride. We want them to be champing at the bit to do it again without creating even a shred of apprehension and uneasiness. Or, more probably, we don't want to reinforce the apprehension and uneasiness that's already there.

The problem with doing that is if it's the first time you're going to show someone aerobatics, it is next to impossible not to want to show them what you've learned. A simple aileron roll? Come on! What's the thrill in that, right? Grandma could do that. I should at least be doing a loop with a snap on the top. A nice outside rolling 360 should let them know how good I am and what I've learned. It's natural that we want to show them our stuff. The problem is that anything past the aforementioned 1*g* aileron roll, or even a loop, is totally wasted on a first-timer. Again, think back to your own first exposure to aerobatics.

That first time out, if your pilot was hotdogging and strutting his stuff, as soon as you were past seeing the horizon upside down for the first time, from that point on, you didn't have a chance of being able to keep up with the action. If he was in look-how-good-I-am mode, everything you experienced was lost in a visual fog. It all looked and felt the same — confusing. In fact, even if you were an experienced pilot, but had not done aerobatics, chances are that your pilot could have done a clean snap and you couldn't tell which way he rolled. You couldn't judge how good he was because *everything* that was happening was so new to you. You didn't have enough experience to judge his skill. You could, however, judge his lack of skill in his approach to introducing people to aerobatics.

Everyone who has never experienced aerobatics is in the same boat. So, when you have your first passenger up for their first aerobatic flight, remember that it's all new to them. Just know that it's a given that they won't be impressed with your flying skills if they are 50 shades of green when getting out of the airplane or their shirt is decorated with breakfast.

Basically, we should look at taking our first aerobatic passenger up from their point of view, not ours. That's the definition of empathy. Think of being in their shoes and think about what you can do to make the experience better. If doing maneuvers, keep them in mind and pick maneuvers that have little chance of upsetting them. And above all, know that it's usually not a specific

WE SHOULD LOOK AT TAKING OUR FIRST AEROBATIC PASSENGER UP FROM THEIR POINT OF VIEW, NOT OURS. THAT'S THE DEFINITION OF EMPATHY. THINK OF BEING IN THEIR SHOES AND THINK ABOUT WHAT YOU CAN DO TO MAKE THE EXPERIENCE BETTER. IF DOING MANEUVERS, KEEP THEM IN MIND AND PICK MANEUVERS THAT HAVE LITTLE CHANCE OF UPSETTING THEM.

maneuver that makes them sick but the repetition of maneuvers — although you should probably avoid lomcevaks and such. While a 1*g* aileron roll is by far the least upsetting maneuver, repeated often enough it can become too much of a good thing. The majority of people don't need to have Unlimited category excitement to have a terrifically good flight. If they see nothing more than a couple of aileron rolls and a loop or two they'll come away terribly impressed and wildly excited. And that's our goal.

One of the things that repetitive maneuvers work on are the contents of their stomach. Knowing that, we just don't do a lot of maneuvers that have high "slosh factors." That includes negative *g*. While few people are bothered by the short-term 3*g* or so required to do a loop, to a newbie, hanging from their belt is the single most upsetting sensation they can feel. This is partially because the contents of their stomach, which are probably looking for a place to hide anyway, are slammed against the top of their stomach. Rolling them over to do a "seat belt check" early in the flight often makes for a very short, and sometimes messy, flight. No matter how badly you want to show how "wonderfully weird" outside maneuvers can be, stay away from anything negative for a newbie's first flight. That's just asking for trouble and is definitely not going to endear you to your passenger.

There's a tendency to worry more about the airplane than that first passenger, when the passenger should be preflighted just as the airplane is. This is because when we preflight an airplane we're assuming something is wrong and we're looking for it. The same thing could be said about the first aerobatic passenger. Plus, since people are a long way from being standard issue because each varies considerably from another, we have to give them some thought before we get in the airplane.

When scheduling the flight, get the passenger's physical dimensions: how tall they are and how much they weigh. Nothing is more embarrassing than having them come to the airport and then the flight has to be canceled because either they don't fit or their weight puts you out of the envelope. That's where a practiced comment is used: "Oh crap, we can't fly. The secondary widget on the framus is broken."

The primary difference between possible first passengers is whether they are pilots or not. Nonpilots are going to need some special attention because they know nothing about airplanes and just the idea of flight is going to cause them apprehension. So, we have to do what we can to play down factors that might be bothering them. Some of this apprehension can be caused by the airplane in question. If it is something "normal looking" like a Citabria, it's unlikely they're going to have problems with it. If it's something like an Extra, it's going to increase the apprehension

simply because they may never have seen anything like it. If it's a Pitts, you can count on their heart rate going up as you shepherd them through the boarding and strapping in process. The front pit of a Pitts is always far out of their comfort zone. This is true for fellow pilots, as well. Nothing in general aviation prepares them for the boarding procedure, the spartan confines, the tiny size, and when the engine is cranked, the noise. Try to put yourself in their shoes and remember how you first reacted to it. It's a combination of excitement and what-have-I-gotten-myself-into feelings. It's also important to know that passengers will respond to the cockpit environment in wildly different ways, and it is impossible to predict their reactions to flight in general. Most love it! Others definitely don't.

It's important that, before launching, we tell them, "We're only doing this for fun, and the minute you're not having fun, make sure you tell me and we'll boogie for home. And, if you're having so much fun that you can't contain it all, put it here." And point out the barf bag.

The single most prevalent thought in people's minds who are about to be exposed to aerobatics is that they'll get sick. This doesn't happen often, but it can happen. Sometimes discomfort is the result of the way the flight is conducted, but it's also sometimes caused by not giving the passenger a little gastronomical advice ahead of time. First, don't come out on an empty stomach. Second, don't come out on a full stomach (stay away from burritos, enchiladas, etc.). A light lunch or breakfast is good. Incidentally, it helps a lot if you let the passenger "fly" the airplane part of the time. This occupies part of their mind and keeps them from concentrating on their stomach. If you sense that things are not going well and you're headed back, let them do most of the flying and, if you have air vents or can open windows, get some air in their face. I've had exactly two get sick in 48 years of doing this, and they were in my first 50 hours of aerobatics. Never happened in the Pitts.

Make sure they realize that they should use the barf bag and not try to throw up out of the open window of a Citabria. Ask me how I know this! That's the only time I personally thought I was going to throw up in an airplane. Thankfully, I was wearing sunglasses.

It's also important you give a thorough briefing about how, and when, to use the parachute, while at the same time downplaying the probability of having to use it. The 'chute briefing itself can build the apprehension level.

So, look forward to giving that first aerobatic passenger ride, but remember that every time we do that, we are the representative and salesperson for the sport. We want to sell the concept of aerobatics, and we do that through creating enjoyable experiences and returning with empty barf bags. *IAC*

WITH YOUR HELP WE CAN TAKE ON THE WOLRD

The U.S. Aerobatic Team will be challenging the world's best pilots at the 30th FAI World Championships in Châteauroux, France on August 22-31, 2019. Unlike many foreign governments who subsidize their teams, the U.S. government provides no financial assistance. Your contribution will show your support in their quest for gold.

USA UNLIMITED AEROBATIC TEAM

The US Unlimited Aerobatic Team is selected and administrated by the International Aerobatic Club, Inc. IAC is a non-profit, IRS 501(c)3 corporation to which donations may be tax-deductible under the provisions of the Internal Revenue Code. Photography by Even Peers/Airspace Media.

DONATE TODAY!

Support the U.S. team in their quest for gold!

Visit www.iac.org and click to donate.

DONATE $2500:
to help sponsor the team's entry fees at WAC 2019.

DONATE $1000:
to help move a competition aircraft 600 miles closer to Châteauroux, France.

DONATE $500:
to help sponsor the team's airfare to Châteauroux, France.

DONATE $100:
to help cover the cost of fuel and oil for one day of training camp.

DONATE $50:
to help to cover the cost of world-class coaching at training camp.

THANK YOU
We will send all donors an 8"x10" team photo signed by the entire team.

THE SEVEN-YEAR ITCH

Life after aerobatics

BY BETH E. STANTON, IAC 436050

IF YOU HAD TOLD me a decade ago that I'd be spending the majority of my waking hours eating, drinking, sleeping, and breathing aerobatics, I would have said you were insane. Simply flying airplanes would have been outlandish enough, but flying them *upside down*? Is that even a thing?

Well, you never know what adventure lurks around the corner when you say yes and choose to follow your highest excitement. My love affair with aerobatics has precisely (ish) paralleled the phases of falling in love.

Psychologist Dorothy Tennov coined the term limerence as the first stage. This is that intoxicating phase of new love that is characterized by trembling, excitement, and obsession. Sound familiar? The chemistry is real. A cascade of hormones and neurotransmitters that are actually forms of amphetamines compel us to compulsively seek our hit of the object of our desire: filling our bodies with the otherworldly exhilaration and sensations of the push and pull of gravity as we move through all dimensions of space.

Stage two is building trust. Can I develop the skills to actually do this? Do my team members and the aerobatic community have my back? This is where we make a leap of faith and go for it. A hallmark of stage two is frustration, exasperation, and disappointment. Again, sound familiar? Moving up the ranks of aerobatic competition, we face our limitations and strive to exceed them. This does not always work out. We have to trust that if we just keep practicing, we can eventually achieve our goals.

Stage three is commitment. The resources of time and money one must invest to jump into aerobatic competition are huge. You have to really, really, really want to do this. Like preparing for a triathlon, your life revolves around training and then participating in the event. Sacrifices have to be made; you must say no to other opportunities, and you will disappoint people who wish you to do other things.

Prior to aviation, I spent a number of years whitewater kayaking. Immersed in a passionate community of people centered on an activity, I discovered a phenomenon that I've dubbed "one trick pony-ism." As much as I loved kayaking, I realized that by revolving my life around this single thing, I started to feel one-dimensional. I craved novelty and expansion, to challenge myself with something new.

After flying competition for seven years, I'm shifting gears and stepping away from aerobatics to expand my pilot horizons. My next endeavor is to earn my instrument, commercial, and CFI ratings. It's kind of hard to wrap my head around the fact that other realms of aviation even exist. Aviation and aerobatics have been absolutely entangled for me from the very beginning. I've told the story many times of how I inadvertently got sucked into aerobatics after seeking out spin recovery training as a 3-week-old pilot.

After approaching former *Sport Aerobatics* editor Reggie Paulk in 2014 about writing a column for this magazine, he responded with an enthusiastic yes. It's been fun to have my own little soapbox to espouse my musings and observations over the years as I've participated in this wacky and wonderful world. Writing this column has been both illuminating and cathartic, as it has helped me process the fascinating idiosyncrasies I've encountered in this singular sport. Thanks for humoring me.

The seven-year itch is such a predictable phenomenon it's a cliché. Research indicates that decreases in satisfaction and fulfillment peak around the seven-year mark. Is this "stepping out" on aerobatics just a phase and I'll come running back to my first love more committed than ever? I guess time will have to tell.

Believe me, this transition feels very strange and is certainly bittersweet. It has been so much fun to fly Super D, the Pitts, and most of all, the Lazer. I'm sure going to miss flying that sexy beast! Having been involved in the IAC as a competitor and chapter president has allowed me to become a better pilot and leader. I am so grateful for all the opportunities that have been presented to me because of the IAC.

As I swung my legs out of the airplane after my checkride on July 7, 2011, I heard a voice whisper in my ear, "What next?" Never in my wildest imaginings could I have foreseen that "next" would lead me to discover aerobatics, where I have met the most incredible people and have had the most thrilling experiences. Thank you for all the brilliance and buffoonery. Farewell for now, aerobatics. Oh, how I've loved you! IAC

Just Like 'Death and Taxes'

It's time for your flight review

BY THOMAS JOHNSON, IAC 436743

A SAGE ONCE WROTE that the only two things in life that are certain are death and taxes. As a certificated pilot, you have to add one more certainty, a flight review. Whether you like it or not, a flight review is part of your aviation life. And, unlike death and taxes, a flight review doesn't have to be something that you dread.

A flight review is required by FAR 61.56. You cannot act as pilot in command of an aircraft unless within the preceding 24 calendar months you have complied with one of the criteria specified in the regulation. How you do it is up to you. You can get an additional rating, use the WINGS program, or complete a certified training program. All are perfectly acceptable ways to do it. You can also get one hour of flight instruction and one hour of ground instruction from a qualified CFI.

Advisory Circular 61-98D outlines how a flight review is to be conducted. The purpose is to provide for a regular evaluation of pilot skills and aeronautical knowledge. It is intended to be a routine evaluation of a pilot's ability to conduct safe flight. Remember, a flight review is training to proficiency. The undertaker or the treasury man cannot come and take you away if the training takes more than the mandated minimum. Only you and your CFI know for sure how long it took.

Your flight review must be conducted in an aircraft you are rated to fly. Your CFI should also be familiar with the aircraft in which the training is done. Doing the review in your Pitts S-2 with someone who has never flown in an aircraft like it is really not in the spirit of the regulation. Use an aircraft in which your CFI can challenge your skill set.

Your flight review is good for all category and class of aircraft you are rated for. So, a flight review in a glider is also good for multiengine, seaplane, rotorcraft, etc.

So, how do you go about doing a good flight review with your CFI?

The first thing you have to do is critically evaluate your skill set. What do you think you do well, and what do you do poorly? Ask yourself if there are maneuvers that you don't like to do, or are even afraid of. Be brutally honest with yourself.

Are you up to speed on the regulations? Can you remember all those little details of the regulations you had to know to pass your practical test? Things like cloud clearance requirements or

"THE FIRST THING YOU HAVE TO DO IS CRITICALLY EVALUATE YOUR SKILL SET. WHAT DO YOU THINK YOU DO WELL, AND WHAT DO YOU DO POORLY? ASK YOURSELF IF THERE ARE MANEUVERS THAT YOU DON'T LIKE TO DO, OR ARE EVEN AFRAID OF. BE BRUTALLY HONEST WITH YOURSELF."

"HUMAN NATURE IS A WONDERFUL THING, AND THE ONE THING THAT REMAINS CONSTANT, LIKE DEATH AND TAXES, IS THAT GOOD PILOTS WANT TO BE BETTER PILOTS."

airspace definitions. More importantly, can you use them in a scenario that you might encounter in your flying?

Once you have done this self-evaluation, it is time to develop a plan. Prioritize what skills you want to train on. Present this plan to your CFI. Your CFI should take this input and tailor the training to what is required and what is desired. Don't be shy about demanding knowledge from your CFI. The flight review is designed to use your CFI as a conduit for the latest and greatest information from the regulations, AIM, and advisory circulars.

As an aerobatic pilot, you regularly do things in a relatively high-performance aircraft — spins, unusual attitudes, etc. — that most pilots don't. Nevertheless, when was the last time you did a short-field takeoff? Or calculated a density altitude and applied it to a detailed performance calculation? Or reviewed operations at a busy airport? Probe those areas of your knowledge base that seldom get used.

Finally, make sure you get a thorough debrief. A good tool is the facilitated debrief. A facilitated debrief is where you, the trainee, critique your actions and the CFI keeps your critique within the acceptable performance boundaries. When you use this technique, you will probably be harder on your performance than your CFI. The best part of learning this technique is that it allows you to continue to evaluate your skills after each flight, which helps you to self-evaluate your skill set in a meaningful way. It is one of the best things you take from a flight review.

Human nature is a wonderful thing, and the one thing that remains constant, like death and taxes, is that good pilots want to be better pilots. So go get a good flight review and be a better, safer pilot. IAC

Gary Debaun

BY GARY DEBAUN, IAC 4145

IAC 4145
Nickname: "Bubba" (from back in the '70s)
Occupation: Retired aircraft mechanic
Chapter Affiliation: A bunch of them
Email: B747Inst@aol.com

INTERVIEWER'S NOTES: I've been doing this Meet a Member column for around 20 years. This is my last as I'm moving on to another column. Over the years people have said, "Hey, why don't you interview the interviewer?" For my last one I think I will. It might answer some questions that some people are hesitant to ask me.

GD: FIRST STANDARD QUESTION — HOW DID YOU GET STARTED IN AVIATION/AEROBATICS?

GD: I started flying when I was big enough to sit on my dad's lap and grab the stick. I built a gazillion model airplanes (I *loved* the smell of Testor's Cement) — then I discovered girls and hot rods. No more airplanes during this period. I joined the Air Force in 1967 as an aircraft mechanic and went to Vietnam in 1968 with the 311th Air Commando Squadron. I retired from the Air Force in 1988 after nine years as a mechanic and 12 years as a flight engineer (C-118 and C-141). During my time in the Air Force, I always had a part-time job at a local FBO until establishing my own business, 1979-1982, at the Corona Airport in California. My wife, Chrissy, and I built our first airplane — a highly modified Smith Miniplane — from 1973 to 1979. This is when I discovered aerobatics. Two people were instrumental in this and talked me into flying my first contest, Dan Rihn and Bill Meyer, who were on the field and had Pitts Specials. I flew my Miniplane in many contests over the next several years and logged more than 1,000 hours in it.

Smith Miniplane

PHOTOGRAPHY COURTESY OF **GARY DEBAUN**

GD: WHEN/WHERE DID YOU FLY YOUR FIRST CONTEST AND HOW DID IT GO?

GD: I flew my first contest at Borrego Springs in 1980. I finished 17th out of 23 in Sportsman (I had no inverted systems in my Miniplane). I was hooked, and I loved the people and the atmosphere of the contests. It was cheap back then — I think $35 to register, and I took my sleeping bag, some sandwiches, and slept under my wings.

GD: THERE WAS A PERIOD WHEN YOU WERE OUT OF AEROBATICS BUT THEN CAME BACK. TELL US A BIT ABOUT THAT.

GD: After retiring from the Air Force, I was hired by Northwest Airlines as a mechanic. Chrissy was tired of living in base housing and rentals and wanted a real home, so I sold my beloved Miniplane and she sold her mother's diamond ring to put together enough money for a down payment on a house in Lakeville, Minnesota. We settled into a normal life for a few years until I came up with enough money for an old beat-to-death Aeronca Champ. We flew the heck out of that airplane with many trips to Oshkosh and elsewhere, and then it happened — EAA AirVenture Oshkosh 1999. The hottest on record as I recall. And there it was, laying in a pile at the Fly Market — an Acroduster Too, one I knew from California back in the day. It had no engine, no prop, and four wings that were toast but one good one. There was no fuselage damage except for one gear that was totally collapsed and useless. Chrissy paid the man $2,000, tied it down on a trailer bed, and took it home for a total and complete rebuild. Nine months later, we had it flying. What a wonderful machine. I was back in the game and joined Chapter 78, the Minnesota Cloud Dancers.

GD: SOMETHING HAPPENED, YOU NEVER FLEW THE ACRODUSTER IN AN AEROBATIC CONTEST. WHY?

GD: I was up one day practicing for our regional contest at Albert Lea, Minnesota, this was 2001 I think. Everything was going well. I went vertical for the hammer and got quite a bit negative on the upline, and I kicked rudder for the pivot. It suddenly and violently snapped into an inverted spin (I had no inverted spin training). I have no idea how I recovered, but when I did I was low enough to mow the lawn (well, maybe not quite that low). It scared me so bad I did not attempt any more aerobatics for 12 years — and to this day will not do a spin in a sequence. I'll substitute with a split-S or something. I cannot seem to work this spin fear out — yet. Besides, nowadays I get quite dizzy and confused when flying aerobatics, and after landing I take a deep breath and wonder how I am still alive. People ask me all the time why I do it if it scares the hell out of me, and my answer is always the same, "Not sure; I think because it's expected of me."

GD: YOU CRASHED A COUPLE OF PITTS. WANT TO TELL US ABOUT THAT?

GD: In 2012, I was ready to get back in the game again so I bought a nice little S-1C. On the way home (20 minutes into the flight) I switched the fuel valve so the top wing tank would drain into the main tank, and three minutes later the engine sputtered and quit. I was at 2,000 feet AGL. I dead-sticked the airplane onto a lonely narrow country road just missing the telephone wires overhead. I got too far right, and the right gear caught a ditch and pulled me down into it. I hit a small tree and flipped inverted. I destroyed that Pitts. The cause — contaminated fuel.

AcroDuster

Chrissy bought me another Pitts, an S-1S that needed a total rebuild — no problem, we were good at that. We had it flying in about six months. Then, in 2017 on the way back from Pensacola, Florida, I was having trouble with my left brake — and there were crosswinds on every landing. At my home airport, I ran out of luck and ground looped my Pitts in a pretty strong crosswind. Prop strike, left wing damage, and gear collapse. I found the left brake line was split and had leaked out all of the hydraulic fluid. So much for the 2017/18 contest seasons.

INSPECT | REPAIR | RESTORE

Preserving the traditional methods of maintaining ragwing, experimental and certificated aircraft.

We provide support for all modern fabric covering systems.

510.520.5654 - Livermore, CA 94551
www.MikesAeroClassics.com

MIKE'S AeroClassics

PHOTOGRAPHY COURTESY OF **GARY DEBAUN**

Pitts gear collapse

GD: YOU'VE BEEN THE STARTER AT THE U.S. NATIONAL AEROBATIC CHAMPIONSHIPS SINCE 2010 EXCEPT FOR YOUR THREE-YEAR STINT AS NATIONALS CONTEST DIRECTOR. HOW'S THAT EXPERIENCE BEEN?

GD: The starter job is my favorite. To do it correctly it's very challenging, and I enjoy that. There are so many things you must consider when launching a competitor — it's very helpful to actually know the pilot and their starting routine so you can judge the timing — some are *really* slow, but I never rush anyone. You must also know the airplane, is it a slow climber? Or can it rocket right up to the hold? Does it need a longer warm-up time (think Yak or Suk)? Think about the program. If it's an Unknown, you must wait a little longer than normal knowing the pilot in the box will probably take a break or two. Things like that. It's fun. Being the CD at the Nationals of course is a challenge. I enjoyed working with all the volunteers and all the pilots. It was hard at times, but it was fun and I'd probably do it again someday.

GD: WILL YOU EVER COMPETE AGAIN?

GD: I just finished all the repairs on my Pitts; she's ready to fly. It's been two years since my last accident. I'm still a little gun-shy, and my insurance doubled. It's not fun flying a lawn dart cross-country wondering when the engine is going to quit. Yes, I would like to compete again, but at 71 I'm running out of time, and the desire to fly the Pitts is just not there — we shall see in the coming months. Never say never.

GD: WHO IN THE SPORT HAS BEEN AN INSPIRATION TO YOU?

GD: At the start, it was Dan Rihn. I loved his Pitts and vividly remember the day he flew it out of Corona (still in silver) headed to a contest (I think). Also Bob Herendeen, who on a few rare occasions would stop by my shop when he was in Corona and give me some advice (what a gentleman he was). Also, Bill Meyer helped me in the early years, and I can't forget all the gang at the Starduster Corporation at Flabob Airport. In later years, I met Tom Adams, who has become my best friend over the last 10 years. That guy is an inspiration to any aerobatic pilot.

GD: YOU'VE BEEN AN IAC MEMBER FOR AROUND 40 YEARS NOW. ANYTHING YOU WOULD LIKE TO SEE CHANGED?

GD: It's gotten out of control (financially). If you want to fly a contest, it's pretty expensive. Just to fly the Nationals will cost you well over a thousand bucks or more depending on how far you have to fly from. Seems that everyone has Extras, MXs, Panzls, Edges — super-expensive aerobatic machines. You never see a Smith Miniplane, Starduster, clipped wing Cub, or Taylorcraft anymore. Back in the day, we used to have to build our aerobatic machines. Nowadays these kids just go buy them.

GD: ANYTHING IN THE SPORT THAT IRRITATES YOU?

GD: When a contest is over and more than 90 percent of the pilots just jump in their airplanes and leave. No regard for any cleanup. Leave that for the volunteers who have been working the whole contest. If you can't help clean up after the contest — don't bother to show up!

GD: DO YOU HAVE ANY OTHER HOBBIES OTHER THAN AVIATION?

GD: I'm an avid adventure cyclist (both bicycle and motorcycle), I dabble in watercolor painting, and I knock a golf ball round the course a couple times a week. ***IAC+***

PHOTOGRAPHY COURTESY OF **GARY DEBAUN**

EAA AIRVENTURE OSHKOSH 2019

EAA would like to **thank its partners for their support** in making your convention special

★ ★ ★ ★ PLATINUM LEVEL SPONSORS ★ ★ ★ ★

Ford · Beechcraft · Cessna · Hawker · Textron Aviation · DAHER · GARMIN · BOEING · JEPPESEN A Boeing Company · AVIALL A Boeing Company · Aircraft Spruce & Specialty Co. · sporty's

★ ★ ★ ★ GOLD LEVEL SPONSORS ★ ★ ★ ★

Airbus ★ BendixKing ★ Epic Aircraft ★ Honda Aircraft Company ★ Lycoming ★ Mars Wrigley Confectionery
Phillips 66 ★ Redbird Flight Simulations

★ ★ ★ ★ SILVER LEVEL SPONSORS ★ ★ ★ ★

AeroLEDs ★ AeroShell ★ Aircraft Owners and Pilots Association (AOPA) ★ Aspen Avionics ★ Collins Aerospace
DS SolidWorks ★ Embraer ★ Embry-Riddle Aeronautical University ★ GE Aviation ★ Icom America ★ John Deere
Lightspeed Aviation ★ ModTruss ★ Motorola Solutions/Northway Communications ★ NATCA ★ Piper Aircraft, Inc.
Poly Fiber Aircraft Coatings ★ Pratt & Whitney Canada ★ Quest Aircraft Company ★ Wipaire, Inc.

★ ★ ★ ★ BRONZE LEVEL SPONSORS ★ ★ ★ ★

Aircraft Specialties Services ★ Appareo Aviation ★ ASA (Aviation Supplies & Academics, Inc) ★ Bose Aviation
Cirrus Aircraft ★ Cleveland Wheels & Brakes/Stratoflex/Parker ★ Continental Aerospace Technologies ★ Covington Aircraft
Dynon ★ Electroair Electronic Ignition Systems ★ ForeFlight ★ GoPro, Inc. ★ Hartzell Engine Technologies ★ Hartzell Propeller
★ Honda Generators / Honda Marine ★ JP Instruments ★ Lincoln Electric ★ Mooney International Corporation ★ Nikon Inc. ★ Pepsi
★ Piedmont Airlines ★ Pilatus Business AircraftPriceless Aviation Products ★ Rotax Independent Service and Training Centres ★ Stemme USA
★ Superior Air Parts, Inc. ★ SureFly ★ Tempest ★ Texas Aircraft Manufacturing ★ TQ-Aircraft Electronics ★ TruTrak ★ Van's Aircraft
★ WACO Aircraft Corp ★ Williams International ★ Women in Aviation International

★ ★ ★ ★ PATRON LEVEL SPONSORS ★ ★ ★ ★

Air Wisconsin Airlines ★ AkzoNobel Aerospace Coatings ★ American Airlines ★ B & C Specialty Products Inc.
Best Tugs ★ David Clark Company ★ DeltaHawk Engines ★ Glasair Aviation ★ L3 Commercial Aviation
Mid-Continent Instrument & Avionics ★ Riesterer & Schnell ★ Softie Parachutes ★ Starr Aviation
Titan Aviation Fuels ★ TKM Avionics ★ uAvionix

★ ★ ★ ★ SUPPORTER LEVEL SPONSORS ★ ★ ★ ★

4imprint ★ Arena Americas ★ Cruiser Aircraft ★ Empire ATM Group ★ Endeavor Air ★ Etched Memory
General Aviation Manufacturers Association (GAMA) ★ GES ★ Goodyear Aviation
Greater Oshkosh Economic Development Corporation ★ Higher Power Hydraulic Doors ★ MCPGSE ★ Meijer ★ Northrop Grumman
Oshkosh Corporation ★ Outlet Shoppes at Oshkosh (The) ★ PerfectChoice Furniture ★ Quietaire Cooling Inc ★ TransportUp
United Airlines ★ University of North Dakota (The) ★ VFW-Veterans of Foreign Wars ★ Wisconsin Imaging, LLC

IAC West Open Championships!

Las Vegas, Nevada — October 18–20, 2019

BY DUNCAN KOERBEL IAC 437649

COME JOIN A GREAT event in the desert of Las Vegas where we will have a blast while flying and while on the ground! The International Aerobatic Club board of directors awarded the 2019 IAC West Open Championship to Jean, Nevada (07L), last November to be hosted by IAC Chapter 12 of Broomfield, Colorado. This contest is a proving run for the 2022 World Advanced Aerobatic Championships (WAAC), which was also awarded last November to the United States by CIVA. The 2022 WAAC will be October 11-22, 2022.

The West Open Championship was hosted by Chapter 12 in Fort Morgan, Colorado, in 2018 and 34 pilots competed. We hope to match that in Las Vegas, as we need input on all fronts to assess the venue, flight and ground operations, and attractions. This a unique venue to bring your family to as a reward for braving the season for their aerobatic heroes. We could turn this into an annual event.

We are excited to fly at Jean and are planning on two boxes for practice. We will use the existing Chapter 777 box and the new competition box to allow for generous practice slots. The competition will take place in the box next to the runway as this is the concept that will be used for the 2022 WAAC. Feedback on the box location and orientation will be helpful as well as all other aspects of running an event out of Jean.

We will reserve rooms at a few price points, but for a slightly higher price, we will get a package at the M Resort Spa Casino hotel. This is a great venue for pilots' family and friends to hang out when not at the airfield. We will also organize group outings and provide time to go do whatever you want to in Las Vegas. Current consideration is being given to Papillon helicopter tours of the Hoover Dam or Grand Canyon; if you've been there/done that, we are looking at a one-of-a-kind opportunity to strafe targets with live ammo out of the door of a helicopter with Gunship Helicopters. Meanwhile, those on the ground can take laps at SpeedVegas — see if you can match your airplane's cruise speed on a track. Of course, entertainment, world-class cuisine, and a few casinos abound as well.

Entry fee is $215 and covers the contest, apparel, a great poolside dinner at the M Spa on Saturday night, trophies, and lunch on Saturday and Sunday at Jean Airport. Put this on your calendar — it is a great way to wrap up the season! Contact Duncan Koerbel at 720-250-8442 or duncindenver@gmail.com for further info. ***IAC+***

2019 IAC Contest Season Calendar

DATES	HOST CHAPTER	NAME	REGION	LOCATION	AIRPORT
Mar. 28, 2019	89	Snowbird Classic	Southeast	Florida	X35
Mar. 29, 2019	25	Early Bird 2019	South Central	Texas	26R
April 12, 2019	36	Hammerhead Round Up	Southwest	California	L08
April 19, 2019	19	Mason-Dixon Clash	Northeast	Virginia	KFVX
May 3, 2019	23	Sebring 79	Southeast	Florida	KSEF
May 3, 2019	49	Duel in the Desert	Southwest	California	KAPV
May 3, 2019	24	Lone Star Aerobatic Contest	South Central	Texas	KBKD
May 18, 2019	61	Giles Henderson Memorial Challenge	Mid America	Illinois	KSLO
May 31, 2019	38	Coalinga Western Showdown	Southwest	California	C80
June 1, 2019	12	Ben Lowell Aerial Confrontation	South Central	Colorado	KAFF
June 6, 2019	3	Mark Fullerton Memorial 2019 Bear Creek Bash	Southeast	Georgia	KRMG
June 8, 2019	AC7	Killam Aerobatic Contest	Northwest	Alberta, Canada	CEK6
June 14, 2019	67	Apple Cup	Northwest	Washington	KEPH
June 14, 2019	58	Wildwoods Acroblast!	Northeast	New Jersey	KWWD
June 22, 2019	80	Midwest Aerobatic Championships	South Central	Nebraska	KSWT
July 12, 2019	35	Green Mountain Aerobatic Contest	Northeast	Vermont	KVSF
July 12, 2019	77	The Corvallis Corkscrew	Northwest	Oregon	KCVO
July 13, 2019	12	High Planes HotPoxia Fest	South Central	Colorado	KFMM
July 13, 2019	88	Michigan Aerobatic Open	Mid America	Michigan	3CM
Aug. 3, 2019	78	Doug Yost Challenge	Mid America	Iowa	KSPW
Aug. 9, 2019	67	Can-Am Championship	Northwest	Montana	KCTB
Aug. 16, 2019	52	Kathy Jaffe Challenge	Northeast	New Jersey	KVAY
Aug. 16, 2019	AC3	Canadian National Aerobatic Championships	Mid America	Ontario	CNY3
Aug. 31, 2019	AC7	Rocky Mountain House Contest	Northwest	Alberta, Canada	CYRM
Sep. 6, 2019	67	Apple Turnover	Northwest	Washington	KEPH
Sep. 7, 2019	11	James K. Polk Open Invitational	Northeast	Virginia	KHWY
Sep. 21, 2019	-	U.S. National Aerobatic Championships	National	Kansas	KSLN
Oct. 5, 2019	5	The Clyde Cable Rocky Mountain Aerobatic Contest	South Central	Colorado	KLAA
Oct. 11, 2019	36	Akrofest	Southwest	California	L08
Oct. 11, 2019	19	Mason-Dixon Shoot Out	Northeast	Virginia	KFVX
Oct. 18, 2019	107	Texas Hill Country Hammerfest	South Central	Texas	KAQO
Oct. 18, 2019	3	Mark Fullerton Memorial 2019 Bear Creek Bash 2.0	Southeast	Georgia	KRMG
Oct. 19, 2019	12	Las Vegas IAC West Open Championship	South Central	Nevada	0L7
Nov. 1, 2019	23	Sebring 80	Southeast	Florida	KSEF
Nov. 1, 2019	26	Foxy Figures	Southwest	California	KWJF
Nov. 15, 2019	62	Tequila Cup	Southwest	Arizona	KAVQ

PHOTOGRAPHY BY **EVAN PEERS, MATTHEW SPARKS**

ACHIEVEMENT AWARDS

THE ACHIEVEMENT AWARDS PROGRAM provides competition and noncompetition pilots with an opportunity to work toward and reach a level of proficiency and achieve recognition along the way. The achievement awards are a set of standards under controlled conditions with a high emphasis and value on safety. The levels are progressive in degree of difficulty and move from primary, sportsman, intermediate, advanced and unlimited. The categories are divided into smooth and stars — Smooth Awards can be achieved in non-contest environments and Star Awards are achieved through aerobatic competitions.

Here are the recipients of Achievement Awards for October 2018 through April 2019:

PRIMARY	1231 Ekaterina Volkova
SMOOTH	1232 Vibeke Gaard
	1233 Casey Scholz
	1234 Nur Dorak
PRIMARY	748 Cory Wallace
STARS	749 Vibeke Gaard
	750 Ron Smith
	751 Robert Drouin
SPORTSMAN	934 Neil Amonson
SMOOTH	935 Ekaterina Volkova
	936 Vibeke Gaard
SPORTSMAN	1564 Ben Dwyer Ches
STARS	1565 faith Drewry
INTERMEDIATE	516 Zinnia Kelkenny
SMOOTH	
ADVANCED	294 William Luke Lee
SMOOTH	
GLIDER	33 Benjamin Jury
SPORTSMAN	34 Kristen Cianfaglione
	35 Karl-Eric Van Hegewald
	36 Triston Berringer
	37 Michael Cloninger
GLIDER	23 Marcus Rosenthal
INTERMEDIATE	24 Vincent Sabin
	25 Garrett Patnode
	26 Cody Donald
	27 Maeve Daw

HIGHLIGHTS

United States Air Force Academy cadets earned Glider Achievement Awards.

Nur Dorak from Turkey completed his Primary Smooth Award.

Look for information about the Achievements Award Program on an exhibition panel at EAA AirVenture that will be displayed in the IAC building. IAC

The Quiz Answers

1. While no one is sure who did the first inverted ribbon cut (multiple sources credit Ernst Udet, but it isn't confirmed), the first American was Vincent "Squeak" Burnett. He is also the first person to do a square outside loop. A child of the Great Depression who was bitten by the aviation bug, he started skipping school to go to the airport, and later became a parachutist as part of a barnstorming act before getting his pilot certificate and barnstorming himself. Known for careful, methodical risk assessment combined with showmanship and a deep love of flying, he led a colorful and incredible life.

2. Manfred Radius.

3. Marion Cole is believed to have performed this trick in the most aircraft, starting in the 1950s up into the 1980s, including a Stearman, Bonanza, clipped wing Cub, and Decathlon.

4. Betty Skelton. The second was Patty Wagstaff.

Betty Skelton

Patty Wagstaff

5. Wayne Handley's Oracle Turbo Raven. Designated a Giles G-750, the composite airframe was based on the Giles 202, mated to a Pratt & Whitney PT6A-25C turboprop, putting out 750 hp. This gave the Turbo Raven a power-to-weight ratio of less than 2.7 pounds per horsepower, allowing it to fly straight up, hover, back up, stop, and then accelerate out of the hover. Its predecessor, the Raven, and the Turbo Raven were named after the common raven (Corvus corax), which has been observed performing aerobatics apparently for fun.

PLAY TIME

any day of the week

IAC Kids Premium "So Fly" Tee. $20.00

Shop the IAC Pavilion during AirVenture for great merchandise

IAC UNLIMITED COLLECTION AVAILABLE AT WWW.IAC.ORG/STORE

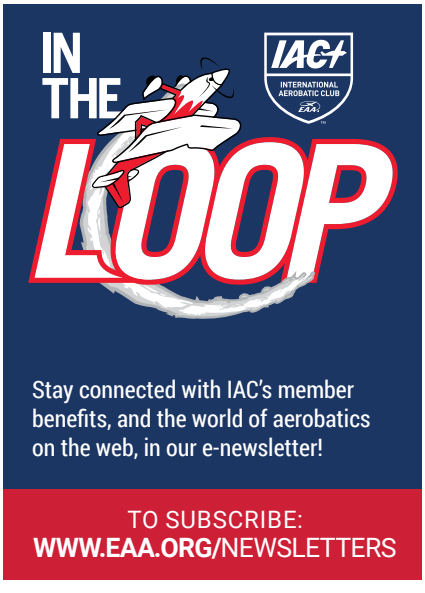
IAC
INTERNATIONAL AEROBATIC CLUB
EAA
™

★ AcroBelt ★

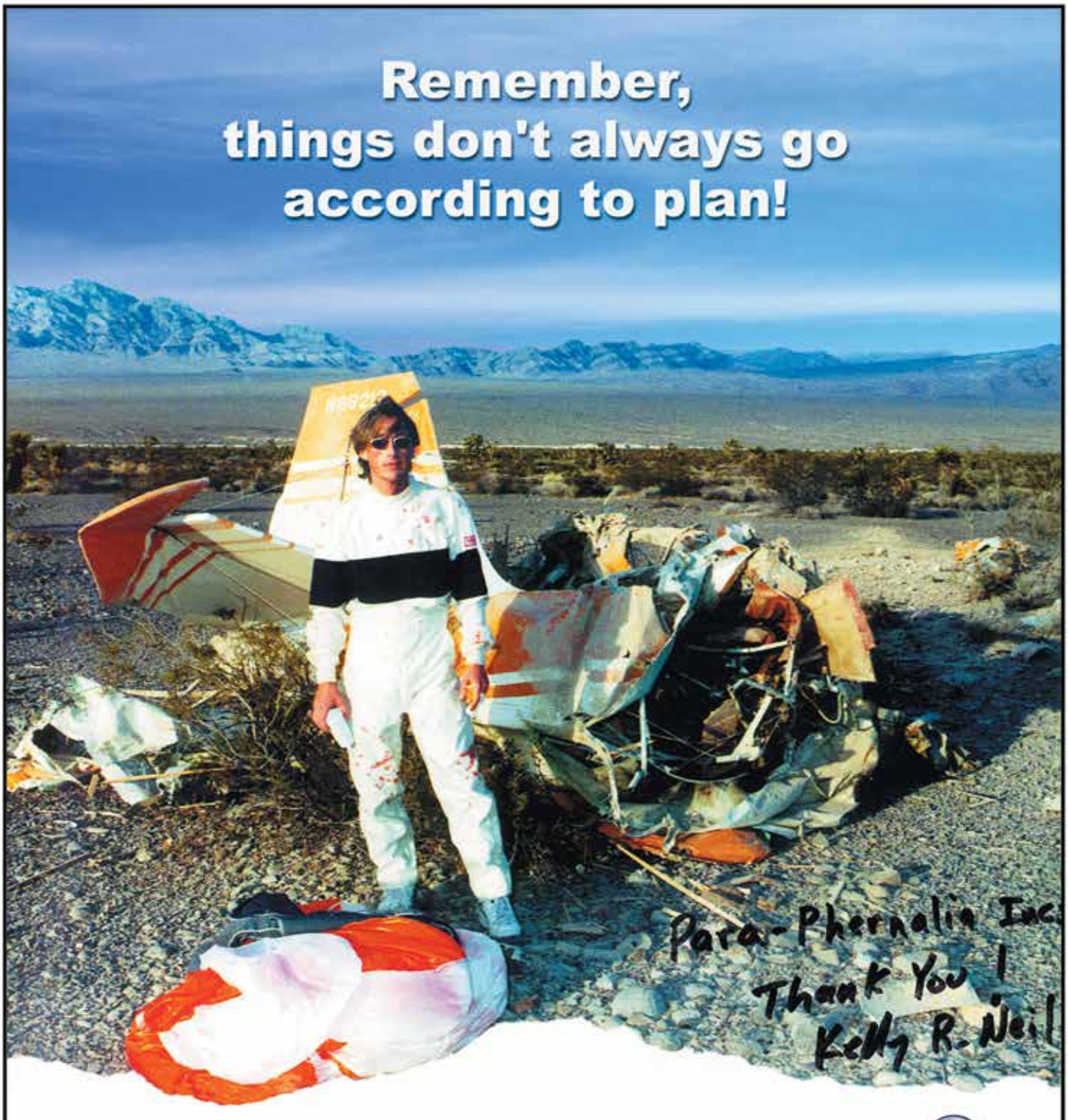
5-Point Ratchet Seatbelt System
Customized To Fit Your Aircraft
Details at:
www.SilverParachutes.com
plus

- Largest Dealer for Softie Parachutes
- Great Deals on New & Used Parachutes
- S.M.A.K. PAK™ Parachute Survival Kits
- Bailout Safety Seminars Worldwide

Silver Parachute Sales & Service
Phone: 209-532-7070
Email: Allen@SilverParachutes.com



ADVERTISER	PAGE	WEBSITE	PHONE
Aircraft Specialty Services	9	www.aircraft-specialties.com	800/826-9252
Dent-Air	48		410/353-2622
EAA AV 2019	19	www.eaa.org/tickets	800/999-3712
EAA Programs	17, 35, 43	www.eaa.org	800/999-3712
Ford	IFC	www.ford.com	800/392-3673
Game Composites	17	www.gamecomposites.com	479/715-4342
Hardy Aviation Insurance	48	www.hardyaviationins.com	479/283-1288
Harvey & Rihn Aviation, Inc.	39	www.harveyrihn.com	281/471-1675
IAC/Falcon Insurance	OBC	www.eaalowerrates.com	866/647-4322
IAC Merchandise	33, 47	www.iac.org/store	800/383-6566
IAC Team	36	www.iac.org/TeamUSA	800/564-6322
LIFT Aviation	15	www.liftavionusa.com	888/724-3005
Mike's AeroClassics Inc	41	www.MikesAeroClassics.com	510/520-5654
MT Prop	37	www.mt-propeller.com	49/9429-94090
Para-Phernalia, Inc.	IBC	www.softieparachutes.com	360/435-7220
Plus 5 Aviation, LLC	39	www.airbum.com	602/738-2045
Silver Parachute	48	www.Silverparachutes.com	209/532-7070
Smoke System Helper	48	www.smoke-system-helper.com	419/360-7414
Southeast Aero	11	www.southeastaero.com	904/824-1899



At Para-Phernalia we are very proud that Softie parachutes were instrumental in saving four lives in 1999.

SOFTIE
EMERGENCY PARACHUTES
THE PROFESSIONALS CHOICE
from Para-Phernalia, Inc.

Toll Free: 800-877-9584
Intl: 360-435-7220
Fax: 360-435-7272
www.softieparachutes.com

© 2000 Para-Phernalia, Inc.

© 2016 Experimental Aircraft Association, Inc.

A WHOLE NEW WAY TO ROLL

The EAA and International Aerobatic Club Aircraft Insurance Plan has all the special coverage options IAC Members require for recreational aerobatics, aerobatic competition and practice, airshow performances, and aerobatic flight schools. Visit **EAA.org/Insurance** today for the right coverage at the best price for you.

Aircraft | Personal Non-Owned | Powered Parachute & WSC Trike | Accidental Death & Dismemberment | Flight Instructor | Hangar | Airport

EAA Insurance Solutions

Administered by Falcon Insurance Agency, Inc.

EAA.org/Insurance | 866.647.4322

When you insure with the EAA Aircraft Insurance Plan you are helping IAC promote and enhance the safety and enjoyment of aerobatics.