SPORT Aerobatics

JANUARY 2019

OFFICIAL MAGAZINE of the INTERNATIONAL AEROBATIC CLUB

REGIONAL STARS OF 2018

TOO BAD YOU CAN ONLY PICK ONE.

The Ford F-150 engine lineup features best-in-class towing, torque and payload.* So no matter which one you pick, you can't lose. **FORD.COM**

THE FORD F-150 ENGINE LINEUP. NOW WITH POWER STROKE® DIESEL.

BUILT Ford TOUGH

*When properly configured. Class is Full-Size Pickups under 8,500 lbs. GVWR based on Ford segmentation.

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

SPORT Aerobatics Vol. 48 No. 1 / January 2019 A PUBLICATION OF THE INTERNATIONAL AEROBATIC CLUB

Contents

FEATURES

DEPARTMENTS

COVER

Cover and above: With paint like that, you can't help but have fun! Having flown his RV-8 in six contests, Jerry Esquenazi, IAC 438873, placed first in both the North East and South East Regional Sportsman competitions as well as top pilot in the unofficial RV competitions, series.
Photos by Evan Peers.

Letters

Dear Editor,

As I read the president's column titled "The Heartbeat of IAC" in the April 2018 issue of *Sport Aerobatics*, it occurred to me that many International Aerobatic Club members may not really know our new president, Robert Armstrong. Especially the newer ones.

I was part of the group of 11 members who nominated Robert for the International Aerobatics Hall of Fame. In reading through the letters, it was quite clear how dedicated he is to the sport and to IAC, and that he considers the world aerobatic community as family and treats it accordingly. Robert has had more success with less airplane than any previous U.S. competitor except for Leo Loudenslager, Kermit Weeks, and Henry Haigh. His selflessness and willingness to help fellow competitors with their flying or fixing their airplanes is most evident to his peers and friends, and it will surely make him a successful president.

The attached is my letter that I submitted to the Hall of Fame committee. Some of his contest episodes are priceless.

— Paul Logue, IAC 1247, Brooksville, Florida ***IAC1***

▸ Editor's note: Paul's letter appears in this issue, starting on page 22.

▸ **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.

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
Editor: Evan Peers, editor@iac.org
Contributing Authors: Robert Armstrong, Gary DeBaun, Keith Doyne, Mike Heuer, Doug Jenkins, Paul Logue, David Prather, Ron Schreck, Spencer Suderman
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

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

 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

Governance

BY ROBERT ARMSTRONG, IAC 6712

WELCOME TO THE NEW YEAR! This has been a tremendous learning time for me. I had no intention of becoming the International Aerobatic Club president when I returned to the vice presidency. With the situation that eventually unfolded, I felt that the membership deserved the type of insight that I could return to an organization that had given much to me. Having served out the remainder of that term as board-elected, and now serving as member-elected president, I hope this is the beginning of what will be a great period in the IAC.

The fall meeting of the board of directors held in November was my first as the president of the IAC. It was an event that had me concerned on many counts. As many may recall, the 2017 fall meeting left the board in a bit of turmoil — a situation that was not good for the membership. With the agenda filled to a record size, it was clear that the 2018 meeting was to be quite an event. I was fortunate that other members and board members had the time and patience to review many of my wishes for IAC, and were willing to help with the reality of what I wanted to accomplish. The bottom line is that I found that I had four years of work I was trying to get done in one year. With the feeling that I have been blessed with others who see the same future as I do, I was able to sit calmly and admit that not everything was going to happen this year. There is still a long list of work to be approached in the future. So, as my post-meeting report, I feel the future is very bright.

The most positive, and I feel the members should recognize this, is that we held a meeting that did not end with any hostility. The members of the board all conducted business in a manner that absolutely made me proud to be a part of the process. We did not accomplish all that I wanted — remember the previous mention of four years of business. However, members did get the representation from their directors that they deserve.

We started with a very busy agenda so the amount of time that could be spent on each item seemed like it was not going to allow much discussion. With very polite and cooperative directors, all had ample time to speak and the meeting progressed well. The first full day went well past normal work hours with all willing to continue to complete the action items.

I will give a few notes here on some important issues. I will not be giving a very detailed accounting of all motions and activity, as it will be posted in the members section of the IAC website — under Archives, Governance docs, Minutes — when it is all compiled by the secretary. This is not a small task. As all members of the board volunteer their time, it may take some time.

As president, I advised the board to delay several decisions on some items that traditionally were acted on during the fall meeting, feeling that they needed more work before taking any action. The most important item for many is choosing a site for the 2019 U.S. National Aerobatic Championships. A broad stroke was painted regarding many aspects of our premier contest event. As you are all aware, the moving of the contest to the EAA AirVenture Oshkosh grounds at Wittman Regional Airport in Oshkosh, Wisconsin,

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

has not been the most well-accepted move taken by leadership. The location for 2019 and beyond is now under review by the board and the membership. Oshkosh does have some facilities that may be hard to replace, but the aspects that cannot be controlled by humans must not be ignored. The contest director, John Smutny, did an outstanding job with what can be described as Mother Nature being unhappy with aerobatics. The board has allowed time for review of many parameters that dictate what is needed for an optimum location. These include geographic location, population center, historic weather, box location with regard to wind, judges' positions, runway operation, hotels, hangars, tower/airspace, and local government and population desires. This is a big undertaking, but very necessary for the future. I feel that some aspects of what is required for a great U.S. Nationals may have been ignored with the move to Oshkosh. The process we will be following has two phases: a location for 2019, and a location for the long term. It is important to note that we are not without a location for 2019 in reserve. EAA CEO and Chairman of the Board Jack J. Pelton has offered us the facilities in Oshkosh if we cannot arrange a location elsewhere.

We also had a tremendous number of rules proposals to address. The final result will be posted on the IAC website and listed here in *Sport Aerobatics* when all the required actions are completed.

As always, the fall meeting is where the Known sequences for the next year are debated. This process has changed several times over the years. The sequence committee presented a proposal for each of the categories and, as directed in the *IAC Policy & Procedures Manual*, the board has several options. This year we discussed the sequences with the presentation of each made by committee member Rob Holland. The board voted to return three programs — Primary, Sportsman, and Intermediate — to the sequence committee with recommendations for revision. The Advanced and Unlimited as well as all glider programs were approved as presented. These will be posted when approved by the executive committee and also published in next month's Sport Aerobatics.

One very important item I want to close with is the need for members to communicate with the leadership on their desires and dislikes. I reminded the board members that we were all elected as "at large" representatives. The listing of geographical regions is not in any way a restriction on who your director is. That system is in place to organize communication between chapters and the board. It is not intended to restrict a member from communicating with any or all members of the board of directors. IAC

HALL OF FAME NOMINATIONS

DEADLINE JANUARY 31, 2019

Many people have made significant contributions to the sport and art of aerobatic flight. Some have dedicated their lives to aerobatics. Some of these people may not be pilots. The Hall of Fame selection criteria, "a significant contribution to aerobatics," is broad enough to apply to anyone, including pilots, competitors, designers, and volunteers. You know who they are! If you have a candidate whom you feel deserves to be recognized for significant contributions, please forward their nomination to the committee for consideration.

Individuals, groups, and chapters are encouraged to support the nomination of a local candidate. Quite often, the accomplishments of an individual are best known regionally, and members pooling their resources to develop supporting documentation on behalf of their candidate certainly helps. Nominees who go on to be the inductee typically have a good deal more information provided than just data on the nomination form.

The Hall of Fame committee accepts nominations until February 1 of each year. A nomination petition form may be obtained from the IAC website at www.IAC.org/files/programs/hof_form.doc.

Louie Andrew Awarded Director Emeritus

BY MIKE HEUER, IAC 4

THIS YEAR AT THE U.S. National Aerobatic Championships in Oshkosh, Wisconsin, the International Aerobatic Club awarded director emeritus status to six former IAC directors. Louie Andrew, IAC 5556; Tom Adams, IAC 1999; and I were present to receive the awards personally.

My purpose in writing this article is to recognize Louie, who has been a friend of mine since 1979. He is a wonderful example of why EAA and IAC work — always a volunteer, never looking for the limelight, and not in front of a camera very much. Yet he served for nearly 30 years on the IAC board of directors and served as our legal counsel for all those years, saving us thousands of dollars in pro bono legal advice. He also served as our treasurer for five years, from 1983 to 1988, and for nearly 30 years as EAA's designated representative on the IAC board.

Hailing from Fond du Lac, Wisconsin, Louie was instrumental in the success of the championships there from 1979 until the last one in the late 1990s. Louie attended the University of Notre Dame where he majored in accounting. He then got his law degree from Marquette University Law School and has served on various Marquette governmental bodies. Very active in civic affairs, he has headed a number of local and state organizations.

In addition to his IAC service, Louie was a valuable member of the EAA leadership team as EAA's vice president and chairman of its executive committee for more than 10 years. As a pilot who kept various airplanes at Fond du Lac for many years, it's safe to say his first love was IAC. Thank you, Louie, for all your service — most of it behind the scenes.

Game Composites Flies First Production GB1 GameBird

THE FIRST PRODUCTION GB1 GameBird, destined for an as-yet unrevealed customer, made its first flight on November 20, 2018, after several years of development and certification efforts, said Philipp Steinbach, designer of the airplane and CEO of Game Composites.

Just prior to its maiden flight, the airplane received certification for the Garmin G3X avionics package as its primary flight data system, which will be included as standard equipment on all production airplanes. The system provides ADS-B In and Out, FIS-B, engine monitor for both seats, navigation for both seats, and VHF and XPDR touchscreen interface for both seats.

The GB1 is the latest two-place (tandem) aerobatic aircraft to enter the market, and is designed for both sport and touring scenarios. It can cruise at 200 knots for a range of 1,000 nm. Its aerobatic capabilities include stressing for +10*g* to -10*g* and a roll rate of 400 degrees per second. It was granted FAA certification in August 2017 and European certification earlier that same year. Since then, Philipp and Game Composites have been establishing and refining its factory processes and tooling while constructing this first production model.

Philipp reports that the factory is currently set to roll out airplanes at a rate of one per month, and toward the middle of 2019 will increase to two per month.

The base model will cost approximately $400,000.

IAC Fall Board Meeting

THE INTERNATIONAL AEROBATIC CLUB board of directors met in Oshkosh, Wisconsin, November 9-10, 2018, for the annual fall board meeting. The board had 64 agenda items to review, discuss, and make decisions on. All documents are on the IAC website for our members at www.IAC.org/meeting-docs (member login required).

Of major interest to the membership were four big topics pertaining to the 2019 season: U.S. National Aerobatic Championships, proposed rule changes, Known sequences, and plans for EAA AirVenture Oshkosh.

The subject of Nationals came up first. During a site review, the board decided to delay a decision on naming the site of the 2019 Nationals and to take the opportunity to take a look at other airports to host our premier event. The board is looking for an airport that has the right set of criteria to host the championships as well as to be the best long-term home. Research is being done using the center of the United States as a starting point and going out from there. An update on information gathering will be presented to the board January 19, 2019.

This year there were a record-setting 47 rule proposals submitted, of which 25 were sent to the board for consideration. The Rules Committee spent a lot of time scrutinizing all of the proposals and taking member comments into consideration in order to make a recommendation to the board. The Rules Committee is composed of eight individuals who spent many hours evaluating duplicate or similar proposals, effects of the proposals on current rules and, in some cases, the effects of rules on the *IAC Policy & Procedures Manual* or the various computer systems. The board spent the majority of the afternoon of November 10 discussing the proposals under consideration, after which they approved 11 and sent back one for slight modification by the Rules Committee. The new 2019 rulebook will be published once all proposals are processed and approved.

The board then evaluated the proposed 2019 Knowns. Rob Holland, who is a member of the sequence committee, led the discussion. In the power categories, the Primary sequence will remain the same as it was for 2018. The Advanced and Unlimited sequences were accepted by the board as submitted. Sportsman and Intermediate were sent back to the committee for modification. In the glider categories, all sequences were accepted as submitted. All proposed sequences can be found on the IAC meeting documents pages. The complete set of Knowns will be published in *Sport Aerobatics* and on the website once all are approved.

During the discussion on AirVenture 2019 planning, the board agreed and voted unanimously to celebrate the 25th anniversary of the Giles G-200. DJ Molny will lead the planning efforts on the celebration and will be contacting aircraft owners for photos for the exhibition panels. Other details being planned by the AirVenture 2019 working group are the annual IAC membership meeting to be held on the morning of Friday, July 26, 2019, and the IAC membership gathering will take place that night at the EAA Nature Center.

We are already starting to plan AirVenture 2020 since it will be the 50th anniversary of the forming of the International Aerobatic Club. There is room on the planning committee and the working group. If you have an interest in being a part of either group, contact IAC Executive Director Lorrie Penner.

President Robert Armstrong concluded the meeting by thanking all of the board members and others in attendance for a very productive and congenial fall board meeting.

Jim Bourke Appointed Membership Chair

LATE IN 2018, Doug McConnell, IAC 862, suffered serious health problems that left him hospitalized for a period and undergoing major surgery. He subsequently notified the board that he would resign as the chair of the Membership Committee. On behalf of the board of directors and the entire membership of the International Aerobatic Club, President Robert Armstrong commended and thanked Doug for his many years of valuable service in that role. The board discussed potential candidates, and Jim Bourke, IAC 434151, was appointed as the new Membership Committee chair.

In taking the reins, Jim also acknowledged Doug for his many great programs and his understanding of the important issues facing the organization. Jim is looking forward to leading membership development by focusing on retention, freshening IAC's message, and tying in additional marketing concepts.

Jim had recently assumed the position of Safety Committee chair, but with this appointment he will step down from that post. The board is evaluating candidates to chair the Safety Committee. Any members wishing to volunteer should contact Robert at president@iac.org.

Alice Johnson Named Unlimited Team Manager

ON THE RECOMMENDATION OF the 2019 U.S. Unlimited Aerobatic Team, team captain Rob Holland put forward Alice Johnson, IAC 23463, as their selection for team manager. The board voted unanimously to approve Alice as the 2019 team manager.

Alice returns to the role after successfully managing the Unlimited Team at the 2017 World Aerobatic Championships in Malelane, South Africa.

Being present at the meeting, Alice took the opportunity to brief the board on her vision and thoughts on the need for the Team Council to act as and maintain a best practices repository to effectively support all of USA's aerobatic teams. Areas such as transportation and shipping practices, available training camp facilities, qualified coaches, mechanics, warm-up pilots, and so on are universal to fielding any team. She also expounded on the need for IAC to cultivate additional world judges as we are approaching a time where USA may have no judges on the line at future WACs.

In August 2019, the U.S. Unlimited Aerobatic Team will travel to Châteauroux, France, to compete for individual and team aerobatic titles at the 30th FAI World Aerobatic Championships. *IAC!*

WELCOME NEW MEMBERS

Members are the heartbeat of IAC, and our heart is beating at a healthy pace. In the last quarter, IAC greeted 86 new members into the ranks of aerobatic competitors, recreational pilots, and enthusiasts around the United States and the world.

INTERNATIONAL

AUSTRALIA
Ian Close
Andrei Judzewitsch

AUSTRIA
Marius Grienwaldt

CANADA
Cody Bradford
David Chiarcos
Sarah Dallaire
Simon Rowland

JAPAN
Eiichi Sengoku

PHILIPPINES
Paul Thomas

UNITED STATES

ARIZONA
Steven Babyar
Eric Moore
Rohan Morajkar
Edgardo Ucciani

CALIFORNIA
Yousef Alghanim
Daniel Chripczuk
Adam Fern
Ronald Lem
Mark Pollard
Douglass Sisk
Daniel Strauss
Zhenxiang Wen

COLORADO
Jared Bachman
Andrew Balistere
Triston Berringer
Nicolas Besman
Holly Burnham
Michah Chollar
Kristen Cianfaglione
Michael Clonginger
Matt Humphrey
Bryce Jukkula
Benjamin Jury
Andrew Lewis
Julia Pack
Jon Paukovich
David Quatroch
Nick Ribba
Christopher Rothe
John Saydah
Richard Tarasewicz
Zach Thorp
Karl-Erik VanHedgewald
Daniel Wilmoth
Kari Wise
Douglas Witmer

FLORIDA
Bruce Cynamon
William Falotico
Daniel Kriedeman
Benjamin Lache
Samuel Nodal
Tyler Smith

GEORGIA
James Hall
Cheryl Hawkins

IDAHO
John Whalen

ILLINOIS
Barney Cyrnek
Kemal Kljako
Kristin McGuinness

INDIANA
Geoffrey Andrews
Seth Portmann
Kenneth Raver
Linzie Tuck

KANSAS
James Kubisiak

MAINE
Jared Schmelzer

NEVADA
Michael Brown

NEW HAMPSHIRE
Matthew Dunkel

NEW YORK
Charles Desjardins

NORTH CAROLINA
Robert Dickson

OHIO
Kurtis Blymiller
Scott Curren

OKLAHOMA
Thomas Haning
Benjamin Thresher

OREGON
Andrea Johnson

PENNSYLVANIA
Ralph Beatty
Carmela Gliberti
Caleb Keller

SOUTH CAROLINA
Walter Drag

TEXAS
Jozef Balint
Kaitlyn Brown
Dale Wilcox

UTAH
Neil Amonson
Michael Bingaman
Matthew Hotchkiss

VIRGINIA
Benjamin Bennett

WASHINGTON
Michael Mason
Ekaterina Volkova

WYOMING
William Ketcham

The Quiz

BY JONATHAN APFELBAUM, IAC 433983

1. Who first did each of the following maneuvers?
   - Cuban-eight
   - Outside loop
   - Full vertical roll
   - First loop
   - Torque roll
   - Zwiebelturm (Spiral Tower)

2. What was the split-S originally called, and who performed it first?

3. The maneuver the falling leaf is frequently credited to Frank Courtney in 1917 flying a Sopwith Camel. What was it originally called, and is this an accurate attribution?

4. Gerhard Fiesler, creator of the Fiesler Storch, was the first to invent inverted oil and fuel systems. He also created which aerobatic maneuver?

LOOK FOR THE ANSWERS ON PAGE 21

COMPETITION SERIES RESULTS

The IAC Regional Championship Series was created in 2002. The series awards competitors that perform with the highest consistent scores throughout the season in contests based in each of the six IAC U.S. regions: Mid America, North East, North West, South Central, South East, and South West. Canadian contests are included on request of the organizers and assigned a region based on consultation with them.

A series will consist of a minimum of three contests. The U.S. Nationals serves as a wild-card contest for every region in which a competitor participates. The average of the best three contests flown in the region will be used. If a participant flies more than three, their highest scores will be used to arrive at their total percentage. This format enables pilots to improve their score by attending more contests and encourages participation at more contests. Any competitor may qualify based on their participation at contests held within the region and does not need to be their home region.

Larry Ernewein

Krysta Paradis

2018 IAC REGIONAL SERIES RESULTS — MID AMERICA

CATEGORY	PLACE	PILOT	SCORE
PRIMARY	1st	Torin Walhood	81.13%
	2nd	John Strong	77.08%
SPORTSMAN	1st	Larry Ernewein	87.62%
	2nd	Jarrett Croy	83.05%
	3rd	Alex Hunt	81.35%
	4th	Liz Birch	78.85%
	5th	Galen Killam	73.65%
INTERMEDIATE	1st	Justin Hickson	78.17%
	2nd	Cory Johnson	77.39%
ADVANCED	1st	Steve Johnson	69.87%
UNLIMITED		no qualifiers	

2018 IAC REGIONAL SERIES RESULTS — NORTH EAST

CATEGORY	PLACE	PILOT	SCORE
PRIMARY		no qualifiers	
SPORTSMAN	1st	Jerry Esquenazi	82.92%
	2nd	John Shavinsky	80.51%
INTERMEDIATE	1st	Mathieu Barbin	79.20%
	2nd	Ronald Mann	78.54%
	3rd	Wes Liu	76.78%
ADVANCED		no qualifiers	
UNLIMITED	1st	Krysta Paradis	65.12%

2018 IAC REGIONAL SERIES RESULTS — NORTH WEST

CATEGORY	PLACE	PILOT	SCORE
PRIMARY		no qualifiers	
SPORTSMAN	1st	Susan Bell	82.63%
	2nd	Charlie Teeuwsen	77.84%
	3rd	James Potterf	74.75%
INTERMEDIATE	1st	Luke Penner	82.73%
	2nd	Neil Harris	81.30%
	3rd	Ben Rose	79.33%
	4th	Anthony Oshinuga	70.58%
ADVANCED	1st	Peter Gelinas	73.82%
	2nd	Jerry Riedinger	68.51%
	3rd	Doug Sowder	54.63%
UNLIMITED	1st	Jerzy Stryz	79.71%
	2nd	Dave Barbet	77.57%
	3rd	Jim Bourke	76.41%


Susan Bell

2018 IAC REGIONAL SERIES RESULTS — SOUTH CENTRAL

CATEGORY	PLACE	PILOT	SCORE
PRIMARY	1st	Natalya Shemigon	82.71%
	2nd	Stefan Comina	77.11%
	3rd	Jenna Coffman	75.74%
	4th	Jenny LeCuyer	69.35%
SPORTSMAN	1st	Sam Robinson	81.32%
	2nd	Scott Perkins	81.12%
	3rd	David Valaer	81.06%
	4th	Brooks Dickerson	80.64%
	5th	Christopher Phillips	78.40%
	6th	Vibeke Gaard	55.94%
SPORTSMAN GLIDER		no qualifiers	
INTERMEDIATE	1st	Shaun Brautigan	82.62%
	2nd	Tom Rhodes	82.42%
	3rd	Antonio Davila	81.79%
	4th	David Prather	79.76%
	5th	Doug Jenkins	79.00%
INTERMEDIATE GLIDER		no qualifiers	
ADVANCED	1st	Mike Forney	77.14%
	2nd	Dick Fennell	61.87%
	3rd	Duncan Koerbel	58.83%
	4th	Klayton Kirkland	54.92%
UNLIMITED		no qualifiers	


Shaun Brautigan

PHOTOGRAPHY BY **EVAN PEERS**

Luke Penner

2018 IAC REGIONAL SERIES RESULTS — SOUTH WEST

CATEGORY	PLACE	PILOT	SCORE
PRIMARY	1st	Matthew Sparks	60.69%
SPORTSMAN	1st	Susan Bell	84.72%
	2nd	Pawel Miko	80.06%
	3rd	Magne Nerheim	76.83%
	4th	Bryan Jones	74.90%
SPORTSMAN GLIDER		no qualifiers	
INTERMEDIATE	1st	Stephen De La Cruz	81.40%
	2nd	Howard Kirker	81.18%
	3rd	Barrett Hines	78.51%
	4th	Mike Eggen	74.44%
INTERMEDIATE GLIDER		no qualifiers	
ADVANCED	1st	AJ Wilder	73.91%
UNLIMITED	1st	Jim Bourke	73.37%
	2nd	Hiroyasu Endo	65.68%

2018 IAC REGIONAL SERIES RESULTS — SOUTH EAST

CATEGORY	PLACE	PILOT	SCORE
PRIMARY		no qualifiers	
SPORTSMAN	1st	Jerry Esquenazi	83.83%
	2nd	Randy King	79.24%
	3rd	Carlos Sotolongo	72.88%
INTERMEDIATE	1st	Wayne Asplundh	82.81%
	2nd	Shaun Brautigan	81.54%
	3rd	Jim Wells	75.83%
	4th	Antonio Davila	70.13%
	5th	Charlie Sikes	67.20%
ADVANCED	1st	Marty Flournoy	78.15%
	2nd	Stan Moye	75.27%
	3rd	John Wacker	74.46%
	4th	Chris Magon	71.57%
UNLIMITED		no qualifiers	

Carlos Sontolongo

2018 COLLEGIATE INDIVIDUAL RESULTS

PLACE	PILOT	TEAM	CATEGORY	SCORE
1st	Jarett Croy	UND	Sportsman	83.05%
2nd	Samuel Robinson	MSU	Sportsman	81.47%
3rd	Elizabeth Birch	UND	Sportsman	81.38%
4th	Alex Hunt	UND	Sportsman	81.35%
5th	Brooks Dickerson	MSU	Sportsman	80.76%
6th	Vibeke Gaard	MSU	Primary, Sportsman	80.06%
7th	Christopher Phillips	MSU	Sportsman	78.40%
8th	Triston Berringer	USAF	Sportsman	75.54%
9th	James Jacobson	UND	Sportsman	75.32%
10th	Richard Excell	ERAU	Primary, Sportsman	73.09%
11th	Kristen Cianfaglione	USAF	Sportsman	72.83%
12th	Vincent Sabin	USAF	Intermediate	70.79%
13th	Benjamin Jury	USAF	Sportsman	68.69%
14th	Cody Donald	USAF	Intermediate	67.98%
15th	Maeve Daw	USAF	Intermediate	61.25%

The collegiate competition program is intended to increase the flying safety and encourage interest in aerobatics among college-age students. It is the intent of this program to sharpen pilot skills in the categories where they can be the most rewarded in terms of pilot ability and collegiate recognition. The program is also intended to be a springboard for competitors to continue their pursuit of aerobatics upon leaving the collegiate environment.

Two awards serve to recognize skill and proficiency for the collegiate aerobatic competitor. The Collegiate National Championship Team Award recognizes the highest scoring U.S. collegiate team. The Individual Collegiate National Champion Award recognizes the top three individual collegiate competitors in Sportsman or higher category. To qualify, a competitor must be a full-time undergraduate student in an accredited college or vocational program. Teams may be formed by three or more competitors from the same school, one of which must fly in the Sportsman category.

2018 COLLEGIATE TEAM RESULTS

TEAM	PLACE	COACH	TEAM MEMBERS	TEAM SCORE
University of North Dakota	1st	Michael Lents	9	84.70%
Metropolitan State University of Denver	2nd	Dagmar Kress	12	84.06%
United States Air Force Academy	3rd	Mark Matticola	12	79.21%
Embry-Riddle Aeronautical University, Daytona	4th	Wayne Asplundh	6	76.26%

Jarett Croy and Team UND

PHOTOGRAPHY BY **EVAN PEERS**

2018 L. PAUL SOUCY RESULTS

PLACE	PILOT	REGION	CATEGORY	SCORE
1st	Larry Ernewein	Mid America	Sportsman	87.62%
2nd	Susan Bell	South West	Sportsman	84.83%
3rd	Jerry Esquenazi	South East	Sportsman	84.29%
4th	Shaun Brautigan	South East	Intermediate	83.85%
5th	Jarrett Croy	South Central	Sportsman	83.05%
6th	Adam Messenheimer	North East	Intermediate	82.81%
7th	Luke Penner	Mid America	Intermediate	82.73%
8th	Tom Rhodes	South Central	Intermediate	82.30%
9th	Andy Ernewein	Mid America	Advanced	81.48%
10th	Alex Hunt	Mid America	Sportsman	81.35%

The L. Paul Soucy Award recognizes the IAC competition pilot who achieves the highest percentage of points possible during a contest season and who also competes in three or more contests, one of which must be the U.S. National Aerobatic Championships.

The award was conceived and donated by L. Paul Soucy of Louisville, Kentucky. Paul was one of the founding members of the IAC and passed away in 1971. His vision for the award was to recognize not only skilled pilots, but also those who supported a minimum number of contests, including, at the time, the IAC Championships in Fond du Lac, Wisconsin.

2018 CALIFORNIA SERIES RESULTS

CATEGORY	PLACE	PILOT	SCORE
SPORTSMAN	1st	Susan Bell	83.92%
	2nd	Pawel Miko	80.06%
	3rd	Magne Nerheim	76.83%
INTERMEDIATE	1st	Howard Kirker	81.18%
	2nd	Barrett Hines	78.50%
	3rd	Mike Eggen	74.39%
ADVANCED	1st	AJ Wilder	73.91%
UNLIMITED	1st	Hiroyasu Endo	68.08%

The four California IAC chapters that host regional contests (26, 36, 38, and 49) collectively award trophies to the winners of the point series for each contest season. There are usually five California contests in a season. The responsibility for obtaining and presenting the trophies rotates to each of these chapters once every four years. The trophies are awarded at the responsible chapter's regional contest the following season. Since Chapter 49 is responsible for the 2018 season trophies, they will be awarded at the 2019 Apple Valley regional contest.

To be eligible, a pilot must fly in a minimum of three California contests in a particular category. The best three contests by percent of possible points are counted for a pilot who flies in more than three California contests in a season. The trophies are awarded to the top three pilots by overall series percent of possible points for the five competition categories.

2018 TEXAS SERIES RESULTS

CATEGORY	PLACE	PILOT	AIRCRAFT	EARLY BIRD	LSAC	HAMMERFEST	TOTAL SCORE
SPORTSMAN	1st	David Valaer	Pitts S2C	79.44%	78.06%	82.60%	80.03%
	2nd	Scott Perkins	Extra 330LX	77.45%	79.44%	81.97%	79.62%
INTERMEDIATE	1st	Tom Rhodes	CAP 232	81.26%	80.06%	83.63%	81.65%
	2nd	Doug Jenkins	Pitts S1E	78.48%	77.56%	80.95%	79.00%
	3rd	David Prather	S600F	78.57%	73.74%	84.13%	78.81%
	4th	Tony Davila	S600F	79.01%	72.67%	81.23%	77.64%
ADVANCED	1st	John Harlan	Pitts S1E	60.34%	66.83%	59.04%	62.07%

TEXAS CHAMPIONSHIP SERIES

BY DOUG JENKINS, IAC

2018 was the inaugural year for the Texas Championship Series. The goal of the series was to crown the best pilot in every contest category based on results from contests held in the Lone Star State.

To be considered for the title of Texas champion a pilot must have flown in every multi-category contest held in Texas. This year, those were:

- The Early Bird: April 27-28 in Edna, Texas (26R).
- The Lone Star Aerobatic Championships: June 22-24 in Sherman-Denison, Texas (KGYI).
- The Hill Country Hammerfest: October 12-13 in Llano, Texas (KAQO).

The pilot must have competed in the same category at every contest.

At the end of the season, all pilots who met the requirements had their scores averaged to determine the Texas Championship Series winner in each category.

Our goal is to encourage participation at all of our Texas contests by creating an incentive for pilots in or near Texas to get out there and compete.

What was that incentive? Good question. First and foremost you got bragging rights over all of your peers who fly in your category. Second, you earned an award suitable for your fireplace mantle.

2018 SERIES PROGRESSION

The last weekend of April saw the eagerly anticipated first leg of the Texas Championship Series finally happen. IAC Chapter 25 did its usual outstanding job hosting The Return of the Early Bird in Edna, Texas. The food was excellent (and reason enough to attend every year), the weather was unbeatable, and the people were having a blast!

After the first leg of the Texas Championship Series here is how things stood: There will not be a Primary category champion; there will not be an Unlimited category champion; there were five pilots vying for the Sportsman title; there were four pilots in contention for the Intermediate title; and there were three intrepid aviators hoping to win the Advanced title — all of whom, by the way, flew Pitts S-1s.

Next up was The Lone Star Aerobatic Championships, after which the series was two-thirds complete. As they say, just showing up is half the battle, and a few folks who made the Early Bird were unable to attend Lone Star. This opened the door for those who persevered and made it to North Texas.

Sportsman saw no change in the relative standings, just adjustment based on participation. Intermediate saw the standings change, but all four pilots were still in the running. Advanced also saw a pilot fall out of the running, and the standings tightened considerably.

No one's lead was safe, and it was still anyone's event in every category as we headed into the third and final contest, Hill Country Hammerfest, in Llano, Texas, on October 11-13.

The threat of bad weather kept some folks home, but those who attended enjoyed some fine Texas Hill Country hospitality and some good flying weather! Unfortunately, the good weather was mostly on Thursday, our practice day.

This contest wrapped up the Texas Championship Series. Congratulations to all of the pilots named above who attended all three contests in the first iteration of this concept. That alone shows a dedication to the sport that few possess.

PHOTOGRAPHY COURTESY OF **DOUG JENKINS**

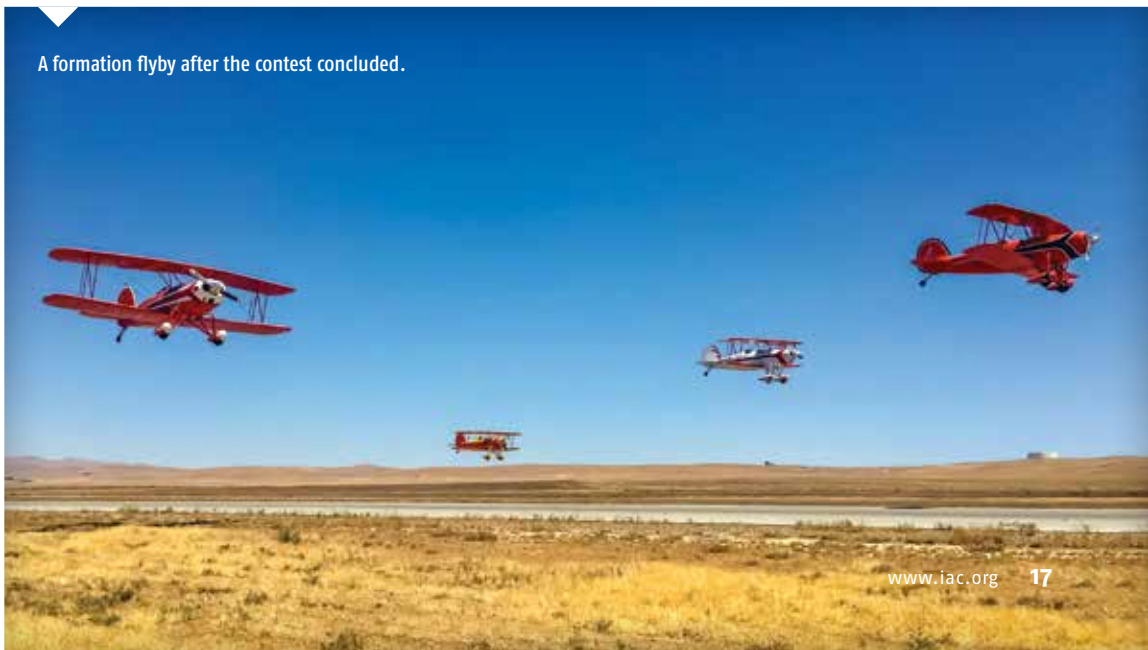
GREAT LAKES INVASION!

Seeing multiple Great Lakes at one time anywhere is unusual. In June 2018, a veritable fleet invaded California IAC Chapter 38's Coalinga Western Showdown. These superb Great Lakes 2T-1A-2 examples are owned and piloted by (left to right):

- Howard Kirker, IAC 6425, Intermediate first place
- Bryan Jones, IAC 439971, Sportsman fourth place
- Pawel Mikolajewski, IAC 437539, Sportsman third place
- Chris Harrison, IAC 440117, Primary second place

PHOTOGRAPHY BY **LAINE LISSER**

A formation flyby after the contest concluded.



RV AEROBATICS

A status report

BY RON SCHRECK, IAC 433751

My election to the International Aerobatic Club board of directors in 2015 was largely an attempt by the IAC to reach out to the huge pool of RV pilots who were flying RVs capable of aerobatic flight, namely the RV-3, RV-4, RV-6, RV-7, RV-8, and RV-14. These models total well over 7,000. If I could bring just 1 percent of these pilots into the ranks of IAC competitors it would be the largest aircraft type ever to participate in the sport. The IAC was struggling to recover its pre-recession strength of more than 6,000 members, and the huge untapped pool of RVs seemed to be a lucrative target. In the board's estimation, I had the qualifications needed to reach out to RV pilots: I had built my own RV-8, was a Formation Flight Inc. flight lead, had air show experience, and had some experience in IAC competition. Additionally, I had been a longtime contributor to the Van's Airforce forum, the internet's largest gathering place for RV pilots. It turns out that the only qualification I was sadly lacking was a working knowledge of the magical arts!

PERCEIVED BARRIERS

When I joined the board, there were only six RV pilots actively participating in IAC competition. There were several perceived barriers that kept many RV pilots out of the competition arena, and I made every effort to address these barriers. Most were not really barriers at all but were perceived as barriers because of years of misinformation, rumors, and lies. In case you missed my repeated attacks on these barriers, I will debunk them here yet again.

Barrier: The RV is a slick airplane and can easily exceed VNE during aerobatic flight.

Yes, these are slick little airplanes, and anyone who flies an RV with a fixed-pitch propeller will tell you that you really need to think ahead in the traffic pattern or you will never get it slowed down in time to stabilize on final approach. The reality is that the aerobatic box in which all competition is performed is only 2,000 feet from the top of the box (3,500 feet) to the floor of the box (1,500 feet) for the categories flown by most RV pilots. You really have to try hard to exceed VNE and still stay within the confines of the box. Can it be done (exceeding VNE)? Sure, if you try hard enough. But in my experience I have never seen this to be a problem.

Barrier: The RV is fast! No way can it stay inside that little aerobatic box.

RVs are fast, and the aerobatic box is only 1,000 meters square. A typical aerobatic sequence has lots of turns, climbs, and descents, and you must quickly transition from one figure to the next. Staying inside the box is just one of the challenges of competition flying that every competitor faces regardless of the type of aircraft they may be flying. Most new competitors start out in the Primary category of competition, which is the lowest of the five levels. We expect pilots to learn the basics in the Primary category, so to alleviate the stress of having to learn to maneuver in that tiny box there are no penalties for flying out of the box at the Primary level. At the Sportsman level, where most RV pilots compete, the penalty for busting out of the box is so small (6 points) in relation to the possible overall score (about 1,300 points) that a few "out" calls rarely affect the outcome at the end of the day.

Barrier: Spin recovery in the RV is difficult, especially when the rotation rate accelerates after two or more spins.

RVs do spin quite nicely, and yes, they tend to accelerate after about two turns. It is the acceleration that gets your attention and may make your heart accelerate as well. Be assured that this is normal spin progression for the RV, and application of normal anti-spin controls will ensure a rapid recovery. Actually, there will never be a requirement to exceed one and a half turns of a spin in IAC competition.

Don't believe me? Well, would you believe Richard Van Grunsven, the designer of the RV series of aircraft? I asked Van to write an article to address these issues, and you can find it in the August 2016 issue of *EAA Sport Aviation*. Turns out that Van is an

enthusiastic advocate of RV aerobatics, but he tempers his enthusiasm with the admonition to respect the design limitations on aircraft weight and balance, as well as airspeed and *g* limits. I echo Van's admonition and also recommend that anyone who is a first-time entrant to aerobatics get professional instruction in spin recovery and unusual attitude recovery, and always practice aerobatics at an altitude that gives you ample time to apply recovery controls should you fumble a maneuver.

If you do venture into RV aerobatics, be assured that you are not plowing virgin soil. Others have been there before you, and we can assure you that there are no unsurmountable barriers to RV aerobatic competition. Jump on in – the water's fine!

SO, WHERE ARE WE TODAY?

This really depends on how you look at the numbers. On one hand, I can report that we now see that over the past three years there has been a 183 percent increase in the number of RV pilots who are actively competing. The raw numbers don't look that rosy. We had six competing in 2015, and 11 were competing in 2018. I am somewhat disappointed by the lackluster participation, but I see some positive steps that the IAC is taking to make competition more attractive.

- There is a concerted effort to tailor the domestic IAC competition to be more supportive of "legacy" aircraft such as the Pitts line of biplanes and the Citabria and Decathlon series. A special Grass Roots medal is awarded at each contest to recognize the highest-scoring pilot of aircraft with 180 hp or less.
- Category creep is a term that describes the increasing difficulty of sequences in each of the five categories of IAC competition from year to year. As aerobatic aircraft have become more powerful and agile over the years, there was a tendency for those who designed the required aerobatic sequences to make the sequences more and more difficult. This category creep tends to push aside the less capable legacy aircraft and has caused many pilots to leave the sport entirely. I'm happy to report that the IAC leadership has taken a real interest in reversing this trend, and you will see that most clearly in the Known sequences that competitors will be required to fly in the 2019 season. Of particular interest to RV pilots, the Sportsman Known sequence has been adjusted to ensure that it can be flown by aircraft that do not have inverted systems. At the Intermediate level, snap rolls have been eliminated from the Known sequence.
- Recognition for a job well done is the way we reward outstanding achievement and motivate all to perform well and put out the greatest effort. To that end, I posted weekly results of all RV pilots competing during 2018 on the Van's Airforce forum. The final tally is included here, and I am pleased to announce that Jerry Esquenazi, IAC 438873, has taken first place in the standings. Jerry took an early lead, has flown more contests than any other RV pilot, and has maintained consistently high scores throughout the season. Congratulations, Jerry!

I will continue to keep a weekly accounting through the 2019 season and hope to see many more RV pilots vying for the top slot.

I am hopeful that more RV pilots will join in the fun and challenge of competition aerobatics. The door is open and the welcome mat is out. There are numerous resources to address your questions or concerns, and I invite you to take the first step. The IAC website is a great place to start. There you can learn about the aerobatic figures flown in competition. You can also find an aerobatic school or instructor, and you can find an IAC chapter near you. You can find me on the Van's Airforce forum or email me directly at ronschreck@gmail.com. Welcome to RV aerobatics. *IAC*

2018 RV SERIES RESULTS

CATEGORY	PLACE	PILOT	AIRCRAFT	TOTAL SCORE
PRIMARY	1st	Brian Pham	RV-4	75.02%
SPORTSMAN	1st	Jerry Esquenazi	RV-8	83.20%
	2nd	Randy King	RV-7, RV-8	78.75%
	3rd	Charlie Teeuwsen	RV-6	77.84%
	4th	Galen Killam	RV-8	71.88%
	DNQ	David Schmitz	RV-8	82.55%
	DNQ	Oliver Spatscheck	RV-8	80.39%
	DNQ	Dennis Parks	RV-4	64.99%
	DNQ	Scott Emery	RV-8	55.99%
SPORTSMAN	DNQ	Ron Schreck	RV-8	68.05%
	DNQ	Bill McLean	RV-4	62.08%

PHOTOGRAPHY COURTESY OF **JERRY ESQUENAZI AND RON SCHRECK**

The Forgotten Checklist

BY KEITH DOYNE, IAC 10545

IN AEROBATIC FLYING, airplanes and gliders take additional stresses and loads. Much thought has gone into creating checklists with the goal of safe flight. Whether your aircraft is certificated or experimental, there is at least one checklist for each aircraft. Certificated airplanes have multiple checklists with one being the preflight checklist. Other checklists, are for pre-engine start, engine start, pre-takeoff, and landing. The pilot's operating handbook is the usual source of checklists for recently manufactured aircraft. For some older aircraft, the flight manual or owner's manual will have the checklists. Gliders add more preflight requirements: A daily inspection list is provided in addition to the preflight checklist. However, the one checklist you will have a difficult time finding, if you can find it at all, is the post-flight checklist. I call it the forgotten checklist.

THE ONE CHECKLIST YOU WILL HAVE A DIFFICULT TIME FINDING, IF YOU CAN FIND IT AT ALL, IS THE POST-FLIGHT CHECKLIST. I CALL IT THE FORGOTTEN CHECKLIST.

If you look at the manual for a Cessna 152, a Bellanca Citabria or Decathlon, a Pitts S-1S, a CAP 10B, an Extra 330SC, or an MDM-1 Fox glider, you won't find a post-flight checklist. You will find an extensive preflight checklist, a short engine shutdown checklist, and possibly a "leaving the aircraft" list. You may be thinking if the aircraft manufacturer did not provide a post-flight checklist, then I don't need one. I disagree with this mindset. You have just finished practicing an aerobatic sequence or a series of maneuvers. The aircraft was stressed to how many g's? This an excellent time to closely examine your aerobatic aircraft. You have the time to relax, review your flight, and look over your aircraft. Just adding gas and oil and then pushing the aircraft into the hangar is not doing enough.

Since the manufacturer didn't provide a post-flight checklist, it is up to the pilot to make up their own post-flight checklist. A good approach is to start with that extensive preflight checklist and slim it down to just the logical steps. One pilot/owner had his own post-flight checklist that he used on multiple aerobatic aircraft, including a Great Lakes, Staudacher, and an Extra 300L. After each flight, he took the time to clean the leading edges of the wings, engine cowl, spinner, propeller blades, wheelpants, aileron spades, and leading edges of the aircraft tail section. While cleaning and removing smashed bugs, he was also checking the security and movement of the control surfaces, aileron spade security, propeller blade nick or cracks, propeller blade movement, inspecting the propeller hub for grease at the blade root, flying and tail wire tension, cracks in sheet metal, etc. When he found the issues, he made a list and worked with the mechanic to fix them. Finding issues early and on the ground leads to much better outcomes.

We spend a lot of time, energy, effort, and money on flying, especially aerobatics. Aerobatic airplanes and gliders get more wear and tear than your typical aircraft. These machines need the extra attention that a good post-flight checklist can provide. You can take a closer look at the key parts and do it at a relaxed pace. Find issues early and fix them before the next flight. Take the time to create your post-flight checklist and implement it after each flight. You might even get the family to come help with the aircraft cleaning while you go through the checklist. IAC

The Quiz Answers

1. Cuban-eight
   Len Povey, 1936

   Outside loop
   Jimmy Doolittle, 1927

   Full vertical roll
   Allen Wheeler, 1927

   First loop
   Petr Nikolaevich Nesterov, 1913

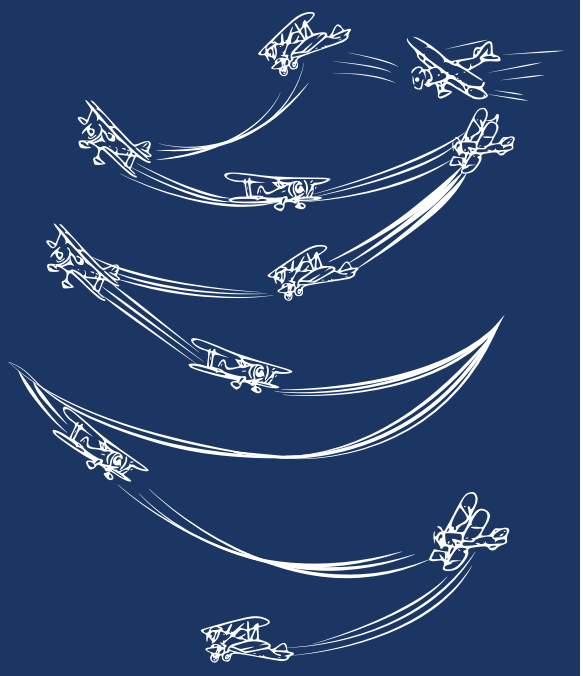
   Torque roll
   Charlie Hillard, 1972

   Zwiebelturm (Spiral Tower)
   Eric Müller, 1974

2. Originally called the apple turnover
   Gustav Hamel, 1913

3. It was called the feuille morte (dead leaf) and had been performed by Adolphe Pégoud and several others before Courtney demonstrated the move.

4. The rolling circle



FALLING LEAF

WHO IS ROBERT ARMSTRONG?

It's not about the airplane; it's about how you shake the stick

BY G. PAUL LOGUE, IAC 1247

ROBERT ARMSTRONG WAS BORN in Marietta, Georgia, in 1955, and he and his family moved to Huntsville, Alabama, in the 1960s — during the time of the active rocket program at the space center there. The aviation seed was planted. From there, he and his family moved to Athens, Georgia, where he attended a junior high school located right next to the Athens-Ben Epps Airport in Clarke County. This allowed him to see much of the activity at the airport, and another seed was planted.

His entry into aviation was not unlike many young aviators. He began washing airplanes at Clark Flying Service in exchange for flying lessons. He learned in a C-150, soloed at 16, and got his private pilot certificate at 17, the year before graduating from high school. He then started taking aerobatic lessons in a Citabria, and another seed was planted.

Robert is one of those people who love fixing things. He learned, listened, and read books to find solutions to problems with airplanes. At the end of the summer of 1974, Robert passed his practical test to become an A&P mechanic. He loved this part of aviation as well as the flying and began working as a mechanic at the flying service. Another seed was planted.

His first air show as a spectator was at Athens. The featured acts were Mary Gaffney and Bevo Howard. Excited, he began thinking about having his own airplane. His first thought was an RV-3, but he stumbled on an S-1C project nearby whose owner had become disinterested in the project and gave it to Robert. He found a set of Pitts plans and later acquired a run-out 125-hp engine from a Super Cub. Over the next few years, he managed to build the S-1C from raw materials and plans while working at the flying service in Athens and while continuing to teach himself aerobatics.

In the spring of 1981, he was ready to test-fly the airplane. As he pushed the little biplane out of the hangar, a crowd was beginning to gather in anticipation of the takeoff. "I've always wanted an airplane," he told them. "And this is the only way I could afford one. My friend James Dixon has built two, so that inspired me. ... I have got $3,000 in it." He confidently strapped himself into the biplane, taxied to the active runway, and took off toward the cloudy sky. Someone in the crowd said, "There goes the Lone Eagle of Clarke County." As he had planned, he flew to a town nearby, circled it, and returned to the airport. He circled Ben Epps, named after Georgia's first aviator, landed, and taxied back to the tarmac

Left: Robert Armstrong, Intermediate winner at Fond du Lac. *Sport Aerobatic*, October 1983, photo by Carl Prasser.

U.S. National Aerobatic Championships, Oshkosh, Wisconsin, 2017.

Robert (left) takes Advanced second place, with Sean D. Tucker first and Phil Knight third, U.S. National Aerobatic Championships, Denison, Texas. Photo by Jean Sorg.

where the crowd was waiting for him. As he climbed out of the cockpit, he said, "It sings, oh it sings ... everybody should have one ... it flies perfectly." As he would soon learn, the airplane is never really finished, and Robert would continue to change the S-1C for as long as he flew it. The building process and flying made him realize that flying for him is not a vocation, but a disease — an addiction — and there is no known cure.

With the S-1C flying, Robert set his sights on aerobatic competition, and he chose his first contest in 1982 at Fond du Lac, Wisconsin, where he entered the Sportsman category. He was immediately greeted by friendly folks from IAC headquarters who offered to help him get his feet wet. For example, in the pre-briefing for the first day, the chief judge began talking about taking breaks during the sequence. Robert, along with many others, didn't know what a break was because the new rulebook was just making the scene and the break was not included yet. The chief took the time to explain the procedure. Robert loved the atmosphere and all the people he had met. He decided then that the IAC was for him, and he planned to be in it for a long time. He didn't place high, but, just before leaving, he learned that he had won the Highest First-Time Sportsman Competitor Award, which was special because a pilot has only one opportunity to win this award and, unlike all of his other trophies, this one had his name on it.

Robert returned home to Athens and soon flew a contest at Bear Creek Airport (NC79) near Atlanta, home of his IAC Chapter 3. He entered Sportsman again and placed in the top three. In 1983, he returned to Fond du Lac, entered in the Intermediate category, and placed first. Robert loved the competition and wanted to move up to Advanced, but he knew that his 125-hp engine wouldn't compete well in the Advanced category, so he began building a 200-plus-hp engine while he continued to make changes to the airframe. The modified C model was finished in the early part of 1986 and was ready for competition in time to go back to Fond du Lac and win first place in the Advanced category, as well as in 1987. In 1988 he placed second in Advanced at the U.S. National Aerobatic Championships, and in 1989 he placed first at Nationals.

In 1991 Robert got the itch to fly Unlimited, and that year he went to Nationals, flew in Unlimited, and

made the U.S. team for the 1992 World Aerobatic Championships in France. This was a major milestone in WAC — it had been some time since a Pitts had gone to a WAC from the United States. Not just any Pitts, but a flat-wing, two-aileron model with the top ailerons drawn in with black paint. Patty Wagstaff wrote in a November 1992 *Sport Aerobatics* article titled "Why We Almost Had a World Aerobatic Championships," "I think the most exotic airplane of all at the World Contest was Robert Armstrong's airplane, renamed *The Road Kill* by the famous Swiss champion Christian Schweizer." Christian remarked that he was proud to see someone fly an airplane that looked as if it was picked up off the street and then present it so well.

Unfortunately, the 1992 WAC contest flew only one flight because of weather. But here's what is amazing: Robert placed 17th out of 57 top pilots; he flew the only Pitts in the top 47 — a homebuilt no less; and, among these top 47, all were flying six-cylinder monoplanes with the exception of one Laser from Great Britain.

It was during this 1992 contest that Robert became friends with Nikolay Timofeev, the three-time world champion. Nikolay has a degree in aeronautical and mechanical engineering. Robert graduated from high school and is a certified practicing A&P. They bonded and were able to talk about Unlimited aerobatic flying, aircraft design, and aircraft repair while sharing their ideas on such subjects.

In about 1994, Robert's reputation with the Pitts had spread and, 13 years from the time he made the first flight in his homebuilt S-1C, he got a call from Curtis Pitts asking Robert if he would come to Homestead and evaluate his new airplane — *The Super Stinker.*

Robert flew different airplanes in the WAC of 1994 (*Streaker*) and 1996 (*Super Stinker*). Realizing the model C was at the end of its competitive life in Unlimited, Robert and his hometown friend Brantley Coile began looking for a reasonable six-cylinder monoplane to continue Robert's quest for the gold at WAC. They found a 1990 French CAP 231 that needed work. For Robert, the challenge of aircraft repair and restoration brings as much satisfaction as the aerobatic flying. Robert believes that there are two ways to get an airplane. "You can spend a lot of money and very little time, or you can spend a lot of time and very little money," he said. The CAP 231, like the Model C, became a better airplane under Robert's care, and by 1998 he had captured the Unlimited champion trophy at Fond du Lac.

1999 was a special year for Robert. He wanted to defend his Unlimited title at Fond du Lac and to compete at Nationals in September. A week before the Fond du Lac contest, he discovered a broken spar on the CAP. He called former national champion Phil Knight, who he had been training with, told him the problem, and asked if he knew of an Extra he could rent for the Fond du Lac contest and if he would he be able to teach him how to fly it in the next few days. The answer was yes, and Robert placed seventh at Fond du Lac.

Nationals was coming up in a month, and Robert still had a broken spar on the CAP. He worked 18 hours a day for 14 days repairing the airplane. He finished tweaking, test-flying, and painting the CAP 231 over the final three days before flying to Texas. After five days of practice before the contest and nearly a month of not flying the CAP, he took first place and became the 1999 National champion and was a member again of the U.S. team heading to WAC 2000 in France.

In 2000, the French pilots told Robert they were seeing the changes he was making in his 1990 CAP 231. His changes included a hot rod engine and a change in the engine mount geometry, which makes the airplane fly straight and eliminates rudder corrections that are normally required when the engine is canted opposite the direction of the engine rotation. Like Nikolay said during the 1992 WAC in France, "He is a great pilot with golden hands."

Robert's quest for the gold at a WAC was stronger than ever. He and the CAP were coming together to be a winner. The 2001 WAC was held in Spain. The first day there, Robert became very sick after the opening night ceremonies. It appeared that he wouldn't have to fly the Q Program until the second day, so he stayed at the hotel so sick that sometimes he felt like he was nearly passing out. By afternoon, he began to feel better and decided to go to the contest site and see what time he would fly the next day. He got to the contest site and, while watching the flying, he heard the chief say, "It looks like we will be able to fly everyone today!" Horrors! His team scrambled to get something in Robert's stomach. How will he ever do it? The sun doesn't set till after 10 p.m. in Spain that time of year, and it had been extremely hot all day. No matter — the U.S. team watched in disbelief as Robert skipped the optional

U.S. Nationals, Denison, Texas, 1988.

Above: Robert (far right) with the Bear Creek Bunch at the U.S. Nationals, Oshkosh, Wisconsin, 2017.

Below: 1999 U.S. National Unlimited Champion.

time for practice and dove into the box, rocking his wings. He flew through the Q program almost in tears, but he knew that if he didn't, he would go home. He felt terrible, and at one point when he depressed the right rudder, it and his foot wound up under the instrument panel! He looked down to the side and noticed that the cable was still intact — and realized that the clevis on top of the master cylinder had broken. He had a rolling turn coming up and just hoped the rudder would stay with him. It did. He rocked his wings for the finish and started his approach to landing while telling the ground controller that he had a mechanical issue, but since Robert was last, the controller was gone.

Robert landed and rolled over to the team parking, and here came the French team mechanic to greet him. The mechanic looked in the cockpit to see what was wrong, ran back to his tent, returned to Robert, reached out, and handed him a new clevis saying, "You will need this." Robert wound up at 12th for the Q flight. His tenacity was revealed again.

The French mechanic? It is believed that Robert received this helpful attitude from the French mechanic because he always has time to help another flyer or mechanic — either with their airplane or their flying — and it doesn't matter what team the receiver is on. Robert considers the WAC community family and treats it accordingly. This contest ended happily for Robert as he placed second overall and won the Charlie Hillard Trophy for being the highest scoring U.S. pilot at the contest.

In 2003, the WAC was in Lakeland, Florida, and Robert finished third and won his second Charlie Hillard Trophy. He continued to fly in the WAC through 2013 with the exception of 2011.

Robert is married to aviation and, more specifically, aerobatic flying, aircraft repair, and modification. Even if he had a "new" aerobatic airplane, he would find a way to improve it, but he realizes that it's not the airplane; it is how you shake the stick. His tenacious attitude toward flying and fixing has given him great results. IAC

"Was this little critter Robert Armstrong's secret weapon?" – Jean Sorg, *Sport Aerobatics*, October 1987.

MICRO VORTEX GENERATORS

BY SPENCER SUDERMAN, IAC 429636

AEROBATIC SEASON HAS WOUND down for most, if not all, in the upper latitudes of the Northern Hemisphere. The temperature falls, and Santa is doing his post-flight repairs. Every conscientious pilot/aircraft owner should be in their heated hangar performing the requisite aircraft maintenance in preparation for the upcoming season. Instead, way too many of them are sitting by a cozy fire inside the house making random unsolicited and/or controversial comments on *The Exploder*, online forums, and Facebook. Or maybe that's just me!

On occasion, I'll humbly post asking clarifying questions that help me understand current trends and set my aviation priorities. From my balmy residence in Florida I can only guess why certain topics seem to repeat with certainty every winter, but that doesn't mean something new isn't afoot, right? It is entirely possible that a fresh way has been found to rebuild a wobble pump, change bungees, power electric underwear from an 8-amp alternator, pick a helmet, select some acro-jammies (flight suit), or my favorite — wear enough socks to keep your feet warm *and* land safely without ever feeling the rudder pedals.

The sock conversation is kind of intriguing since the only way I can get cold enough to even need socks in a plane is to foray into the flight levels with my Pitts, but first I must prepare a plane to achieve an altitude that actually threatens my toes with frostbite. It seems that high altitude flight in a Pitts is an under-discussed topic everywhere — and that needs to change.

My absurd aviation research, which led to inverted flat spin world records from the frigid flight levels, has applications and benefits for all my fellow acro pilots. I'm doing for the aerobatic community what NASA did for writers with the Space Pen. This winter I'm tuning to perfection my latest record-breaking machine, a Pitts S-1C named *Spinner3*, for a late winter/early spring attempt to complete in excess of 120 spins. This will require starting from an altitude of well over 25,000 feet.

I'll bet most of you just re-read the last sentence that said Pitts S-1C thinking it is a typo. It's not, so when you stop laughing and can read on I'll tell you about proven technology that has been overlooked in the aerobatic community, if only for the reason that nobody has had reason to look into it.

For my purposes, the S-1C is nearly perfect other than the need for better high-altitude engine performance, which I have addressed — that is another article. The classic flat-wing Pitts has a lower stall speed than symmetrical wing S-1s, which means the potential for higher ceilings. However, ailerons on the lower wing only and the smallish rudder make for mushy aerobatics in high altitude/low air density flying.

My solution is to apply vortex generators (VGs) to the wings and tail that result in improved control surface effect at low airspeeds. In a nutshell, VGs on the vertical stabilizer make the plane fly like it has a bigger rudder, and VGs strategically placed on the wings in front of the ailerons keep the airflow attached maintaining crisp flight control effect well into the stall.

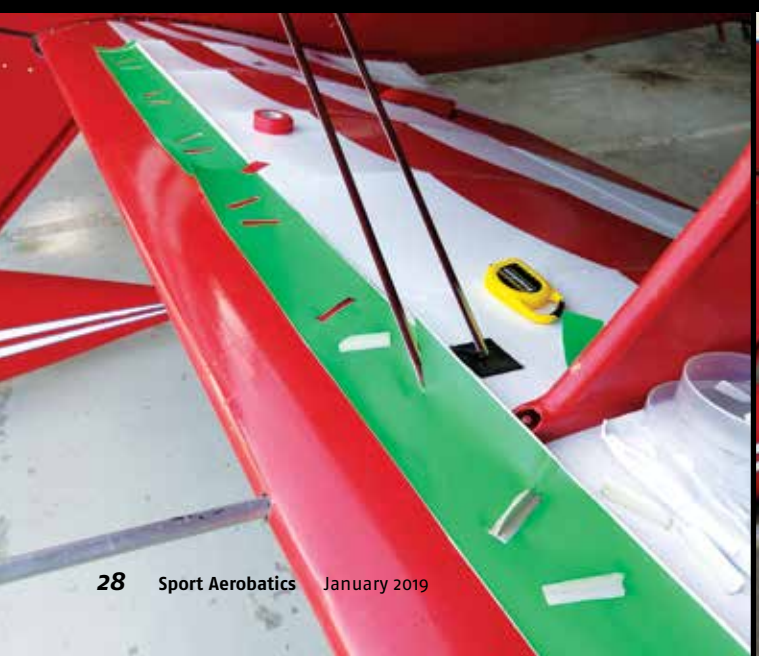
VGs on the wings do lower the stall speed a bit so take that idea with a grain of salt for aerobatics, but VGs on the vertical stabilizer should be standard equipment on every aerobatic plane.

The first time I tried VGs was on my S-2B when looking for improved spin entries at altitude to break the inverted flat spin record for the first time. The four-aileron Pitts didn't seem to struggle with rolls at high altitude, but the rudder did feel mushy.

There is a legend that I'm a know-it-all. It is merely legend; the truth is I'm a fervent researcher. I routinely reach out to aviation savants of notable accomplishment to pick their brains for knowledge. Some people are full of useful wisdom gleaned from their experiences while others are just full of it. Separating the wheat from chaff is the skill I have actually excelled in to enable my accomplishments.

One of the most interesting relationships I have built over the years is with a company called Micro AeroDynamics, www.MicroAero.com, based in Anacortes, Washington. I met company president Anni Brogan many years ago while attending EAA AirVenture Oshkosh. I was making the rounds talking to people about high altitude aircraft performance and soon realized that most of what I was hearing was a pile of chaff without much wheat until someone mentioned that I should look into vortex generators.

I found Anni in her booth, and when I told her what I was working on she didn't give the typical response, which is a look of disbelief and a call to the authorities to bring a



"MICRO VGs ARE CERTAINLY SMALL, BUT THEIR IMPACT ON AIRCRAFT PERFORMANCE IS POTENTIALLY HUGE, ESPECIALLY FOR AEROBATICS."

– Spencer Suderman

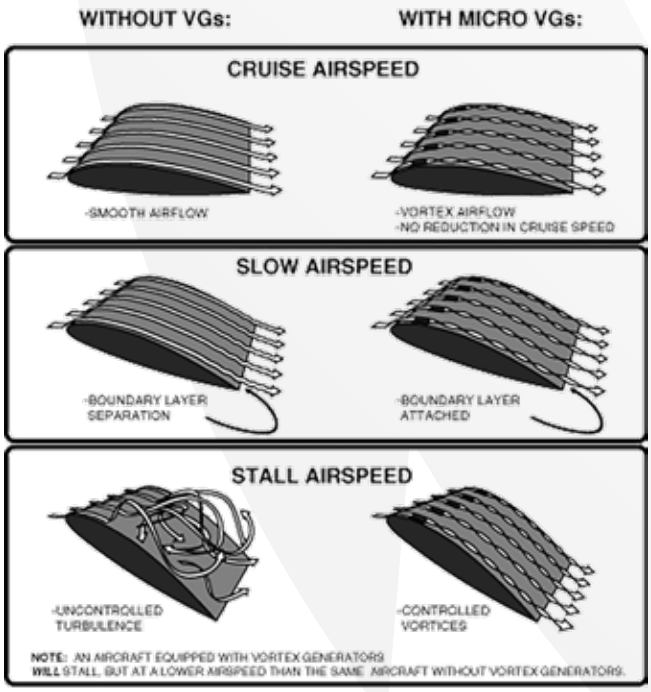
jacket with extra-long sleeves. When you say out loud that you want to climb a Pitts Special into the flight levels, roll it inverted, and then spin more times than the last guy, it does sound crazy, but at Oshkosh crazy at least gets a hearing.

Anni asked me how I was going to do this and what challenges I was running into, which is the kind of conversation I like to have with people whose business is problem-solving. She liked my approach and agreed to help because we could both benefit; I get access to technology, hardware, and knowledge, and she gets to build her intellectual property base on an experimental plane, which is far easier than using certified aircraft for initial testing.

The testing I did to measure the effectiveness of the VGs on a Pitts was to fly knife-edge and look for the airspeed where the plane started losing altitude. The baseline test went like this: From 160 mph in level flight I rolled to knife-edge and held full rudder maintaining altitude. As the airspeed dropped, I noted that at around 130 mph, the plane began sinking.

After applying the VGs to the vertical stabilizer in the specified positions, I repeated the test. Now the airplane would hold level flight in knife-edge with full rudder to 110 mph! The VGs had an objectively measurable effect! The subjective observation was that spin entries at high altitudes *felt* crisper and more certain.

Total aircraft performance is about system-engineering discrete, and sometimes small, components into a solution that meets a requirement. Micro VGs are certainly small, but their impact on aircraft performance is potentially huge, especially for aerobatics in high altitude, or high density altitude, regions. This might be the most productive and simple winter project yet for your plane. IAC+



David Prather

BY GARY DEBAUN, IAC 4145

IAC 436526
Nickname: Danger Dave
Occupation: Airline pilot
Chapter Affiliation: 25
Age: 46

GD: DAVID, HOW DID YOU DISCOVER FLYING AND AEROBATICS?
DP: My father was a private pilot and naval flight officer, and we flew for fun at Navy flying clubs. My first aerobatic lesson was in a Citabria in 1994. I was hooked after the first roll.

GD: YOU WERE A SUBMARINER IN THE NAVY. TELL US ABOUT THAT EXPERIENCE.
DP: Completing naval nuclear training and submarine qualifications was the greatest technical challenge I have undertaken. As a submariner, in two years you complete master's level physics, mathematics, mechanical, and electrical engineering coursework; qualify on a training reactor; learn how to fight fires, flooding, and reactor casualties inside a sealed tube; learn how to approach and attack a surface ship (all surface ships are known as targets to submariners) with just two one-second observations from a periscope; track enemy submarines by the minute amount of sound they emit; and learn how to lead sailors in the most challenging environment on the Earth. After you have completed those qualifications, life gets easier on a submarine and you get to enjoy the incredible aspects of submarining, like driving a 360-foot long ship under a supertanker, hiding from your enemies in a pod of 1,000 spotted dolphins, or dodging 200-foot-long spruce logs in the Alaska Inside Passage.

GD: HOW WOULD YOU COMPARE DRIVING A SUBMARINE VERSUS FLYING AN AIRPLANE?
DP: Driving a submarine is like flying on instruments at 5 knots for weeks on end, where if you get one foot off of your desired depth, you get counter-detected and bring the fury of your enemies down on you and your crew, or embarrass the hell out of the president and the country.

GD: EVER TRY TO ROLL ONE OF THOSE THINGS?
DP: The improved Los Angeles-class submarine would snap roll. If you were going ahead flank speed and threw the rudder over full, the submarine would quickly roll over to knife-edge. If you did it just right, you could dump lunch in the executive officer's lap.

GD: SO, YOU ARE FLYING FOR THE AIRLINES NOW. HOW DO YOU LIKE IT VERSUS YOUR MILITARY CAREER?
DP: Flying for the airlines is great. When you are done flying for the day, you complete the parking checklist and then don't have to worry about the airplane. As a submarine officer you are on call 24/7 underway and stand a 24-hour in-port duty once every three days.

GD: WHEN AND WHERE WAS YOUR FIRST CONTEST? HOW DID IT GO?
DP: I flew the Texas Hill Country Hammerfest in Llano in 2013 in Sportsman. I finished in the bottom half, but I beat my instructor.

GD: WHAT IS YOUR CURRENT ACRO RIDE? ANY CHANGES IN THE FUTURE?
DP: I am flying a beautiful Staudacher S600F. No changes in the near future as this aircraft will easily handle Advanced flying, my next challenge.

GD: WHAT IS YOUR FAVORITE FIGURE TO FLY?
DP: I like the push humpty. You can close it really tight with rudder and engine torque.

GD: TELL US ABOUT YOUR EXPERIENCE AT THE U.S. NATIONAL AEROBATIC CHAMPIONSHIPS THIS YEAR.
DP: After some great coaching and practice flying I thought this would be my year to podium. I flew sloppy in the Known and paid the price. I had a great Free flight after literally a week of weather and uncontrollable delays and took home the bronze.

GD: DO YOU HAVE ANY PRE-AEROBATICS ROUTINES LIKE STRETCHING, YOGA, OR LISTENING TO MUSIC?
DP: Prep the airplane the night before, sleep well, have a good breakfast, lots of sequence walkthroughs, and then relax under the wing alone once my category starts.

"MY FIRST AEROBATIC LESSON WAS IN A CITABRIA IN 1994. I WAS HOOKED AFTER THE FIRST ROLL." – David Prather

GD: ANYTHING YOU WOULD LIKE TO SEE CHANGED IN OUR SPORT?
DP: I would like to see more clubs flying contests. This sport is affordable when you spread the costs across a few partners or a club. I would also like to see a Pitts S-1 championship; there are so many of these capable planes out there that are not flying competition.

GD: WHO IN THE SPORT HAS BEEN AN INSPIRATION TO YOU?
DP: The Three T's. Tony Davilla, my aircraft partner, who never gives up or accepts no for an answer; Tom Braymer, the most natural aerobatic pilot I have watched fly; and Tom Adams, for his coaching and passion for the sport.

Every single aerobatic pilot I meet inspires me, from the newest primary pilot to the icons like Debby Rihn-Harvey who have taken time to fly with me, coach me, and mentor me.

GD: DO YOU HAVE ANY INTERESTS OUTSIDE OF FLYING?
DP: Just about anything outdoors or on the water interests me, and I wish I had a couple of more lifetimes to get it all in. IAC

CLASSIFIED

EMPLOYMENT

Technician and Ferry Pilot Needed – Team Chambliss, A&P certificate required. For full job description and resume submission details, visit www.teamchambliss.com.

TEAM UP for success

Shop the IAC collection of merchandise now available online.

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

Chris Combs (IAC 42991), Rachel, Cindy, Chris and Zeus.

IAC
INTERNATIONAL AEROBATIC CLUB
EAA
™

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.