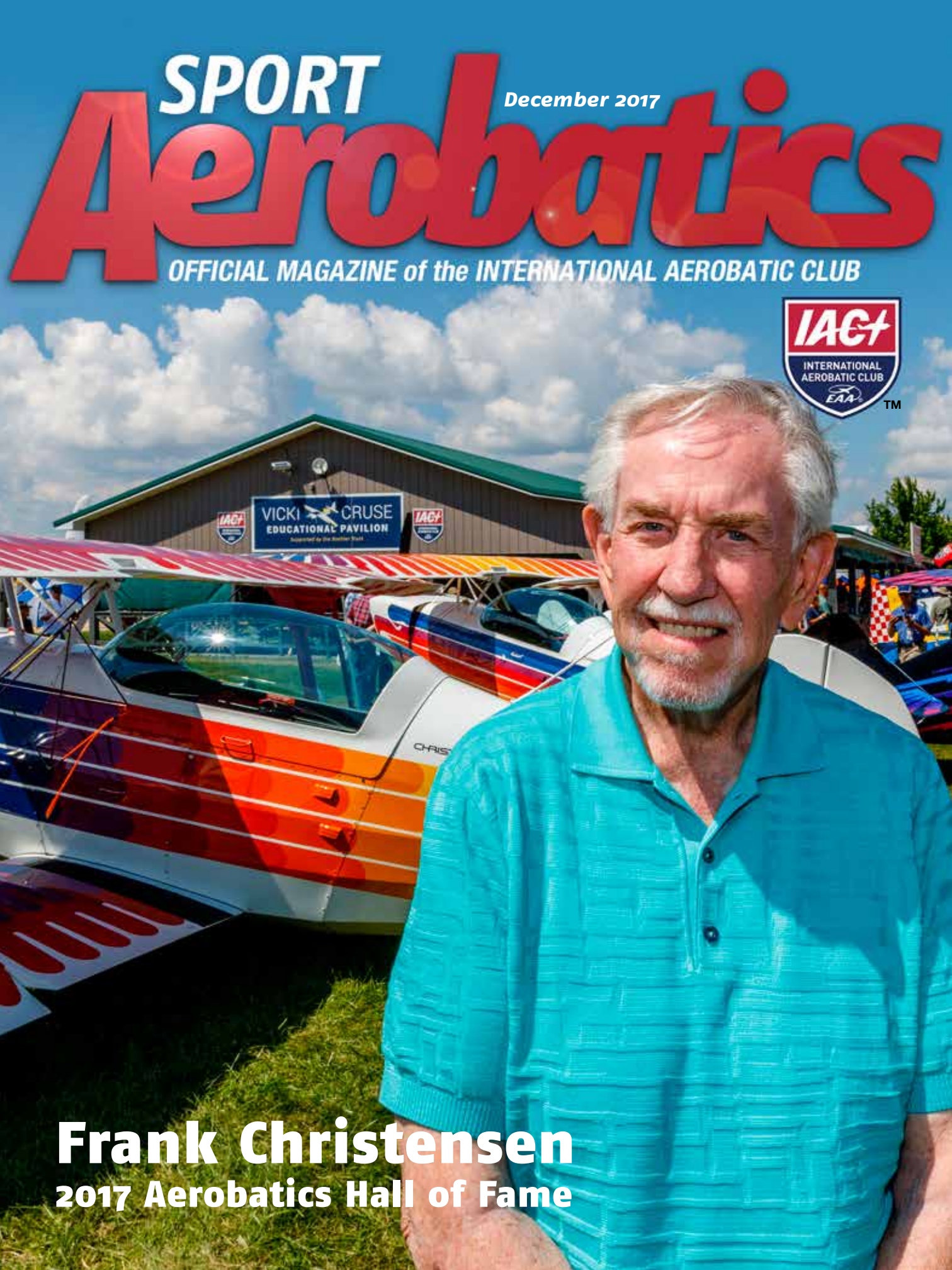
SPORT Aerobatics
December 2017
OFFICIAL MAGAZINE of the INTERNATIONAL AEROBATIC CLUB



Frank Christensen

2017 Aerobatics Hall of Fame


RAISE THE BAR?
F-150 IS THE BAR.
Miles ahead of the competition and pulling away, the new 2018 F-150 continues to innovate. We're talking best-in-class* capability and more tech than NASA. The Ford F-150. It doesn't just raise the bar. It is the bar. FORD.COM
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EAA
THE SPIRIT OF AVIATION
Partner Recognition Vehicle Pricing
*When properly configured. Class is Full-Size Pickups under 8,500 lbs. GVWR based on Ford segmentation. Antenna removed from vehicle. Try to avoid water higher than the bottom of the hubs and proceed slowly. Refer to your owner's manual for detailed information regarding driving through water.

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The only prerequisite for using the Christen manuals is the ability to read, period.

— Frank Christensen

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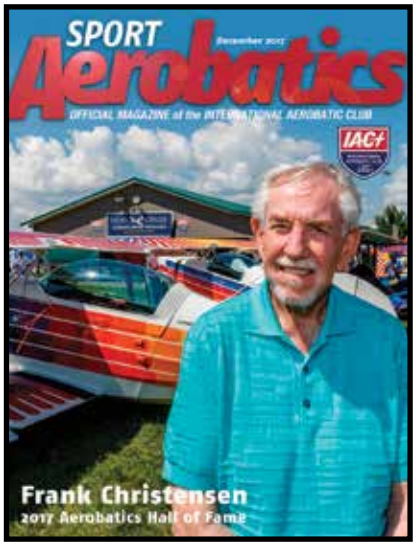

COVER

Frank Christensen and the gathering of Eagles in front of the IAC Pavilion at EAA AirVenture Oshkosh 2017. Photo by Evan Peers.

SPORT Aerobatics
OFFICIAL MAGAZINE of the INTERNATIONAL AEROBATIC CLUB

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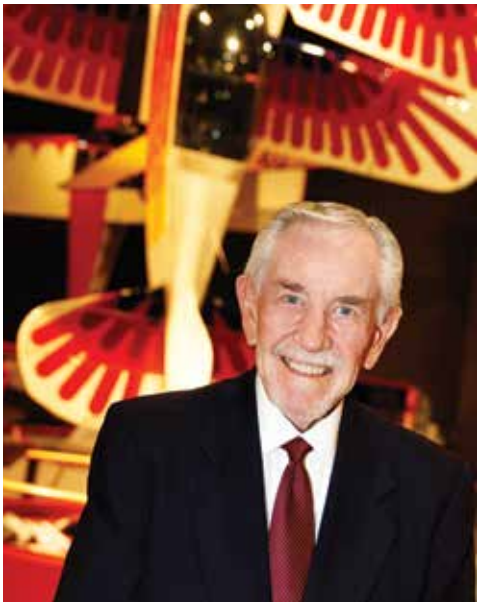
 Sport Aerobatics (USPS 953-560) is owned by the International Aerobatic Club, Inc., and is published monthly at EAA Aviation Center, Editorial Department, P.O. Box 3086, 3000 Poberezny Rd., Oshkosh, WI 54903-3086. Periodical Postage is paid at Oshkosh Post Office, Oshkosh, Wisconsin 54901 and other post 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



THIS MONTH WE WRAP UP 2017 AND OUR CELEBRATION of Frank Christensen and the Christen Eagle. We dug up an early article published in *Sport Aviation* in 1982, in the height of Christen Industries' heyday. This is an article that many of our IAC members likely haven't had a chance to enjoy. Along with that, Frank uncovered several dozen never seen before B&W and color slides, many of which aid to precisely illustrate *The Christensen Method*. Together, these archival elements, along with Frank's induction into the Aerobatics Hall of Fame, our cover throwback to the 2017 EAA AirVenture Oshkosh gathering of Eagles, and the conclusion to one of the latest Eagle builds by Cameron Grossl, bring to a fitting close the year of the Christen Eagle, and the revolution in homebuilt aerobatics that Frank Christensen so expertly brought to our sport.

SUBMISSIONS: Photos, articles, news, and letters to the editor intended for publication should be e-mailed 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.

President's Page

EAA and IAC

MIKE HEUER, IAC PRESIDENT, IAC 4

In last month's issue, National Aeronautic Association President Greg Principato wrote eloquently of the NAA and IAC relationship, the importance of aerobatics in the aviation world, how inspirational it can be to newcomers, and how NAA and IAC are partnered in our relationship with the rest of the air sports world through our affiliation with the Fédération Aéronautique Internationale in Switzerland. NAA has been a member of FAI since 1905, and our letter of agreement with NAA dates to early 1982. That letter gives IAC the "franchise" to manage, promote, and administer competition aerobatics in the United States and is one of the most important relationships IAC has with other organizations.

That said, our relationship with EAA has been key to our success, and it all started some years before IAC was officially founded in January 1970. Little known to most members today, EAA was largely responsible for the reawakening of competition aerobatics in the early 1960s. On January 13-14, 1962, an "International Championship Aerobatic Contest" was held at Phoenix Deer Valley Airport in Arizona and was "sanctioned" by EAA. Aerobatics was very small at the time, competitions virtually nonexistent, and EAA stepped into the gap and organized this event under Paul Poberezny's leadership. Pilots flying in the event included pioneers and Aerobatics Hall of Fame members such as Duane Cole, Bill Adams, Harold Krier, Charlie Hillard, Frank Price, Rod Jocelyn, and Sammy Mason.

Two years later, in 1964, the U.S. National Aerobatic Championships was revived under the direction of Duane Cole, and NAA began sanctioning the events through its agreement with the Aerobatic Club of America, now defunct. These championships were held in Reno, Nevada, for several years before moving to Texas in 1968.

However, EAA remained active in the aerobatic world and created some internal committees and groups to keep tabs on developments, provide expertise, and focus on the use of experimental amateur-built aircraft for aerobatics. In those years, the FAA had considered restricting homebuilts from aerobatics — which would have been catastrophic for the development of aerobatics in this country which took place in subsequent years. During the 1960s, EAA even organized its own aerobatic contest in conjunction with the EAA fly-in convention in Rockford, Illinois. My first year in competition was 1968, and I proudly display the first-place plaque that I won that year at the EAA aerobatic contest in Harvard, Illinois, in the Primary category. When EAA moved to Oshkosh in 1970 and IAC formed that same year, we held our championships in nearby Fond du Lac for decades. For years, we attended the fly-in — now called EAA AirVenture Oshkosh — and then packed up and moved to Fond du Lac the following week for our premier event. The Nationals was organized by the Aerobatic Club of America in Texas until IAC assumed that responsibility in 1982.

EAA was largely responsible for the reawakening of competition aerobatics in the early 1960s.

Of course, all of this is now history. But it is important to understand how long and deep our relationship with EAA is and the value it has for IAC and the sport of aerobatics itself. Today, EAA keeps our membership database, houses our merchandise inventory, fulfills orders, handles advertising, lays out the magazine each month and uploads to our printer, sends out IAC news in its various e-newsletters, and its finance department keeps the books. Aside from this administrative support, we benefit from being a

part of a 211,000 member organization with hundreds of local chapters and representation in Washington.

As IAC president, I also serve on the EAA board of directors, and at a recent meeting, I was pleased to learn that today, more experimental amateur-built aircraft are newly registered every year with the FAA than factory-built general aviation aircraft. As EAA CEO & Chairman of the Board Jack J. Pelton said during that meeting, where would general aviation be today in the United States without EAA? The fact that the regulations affecting amateur-built aircraft have remained virtually unchanged for 60 years is testimony to the EAA founder's vision and subsequent work to preserve our heritage, culture, and traditions. Those regulations have permitted the design and construction of such iconic aerobatic aircraft as the Pitts, Edge, and Eagle.

As you can imagine, this is why I was delighted when the board of directors decided to move the U.S. National Aerobatic Championships to Oshkosh this year. Though our mailing address has been an Oshkosh post office box for many years and our executive director works there, I have felt that Oshkosh is our "home" just as it is for the Warbirds of America and the Vintage Aircraft Association — the other two EAA divisions. Warbirds and vintage aircraft are important and key features of AirVenture each year. IAC does not have the presence these aircraft types do at the world's largest aviation event, but it is no secret that most of the air show performers are members of IAC and many come from the competition arena. You often see national champion titles or team membership painted on the sides of their aircraft, listed on their websites, and even on their flight clothing. Thus, IAC does contribute to AirVenture in a significant way by providing a path to aerobatic proficiency and skill through our competition venues. In turn, the air show performances we see each year at AirVenture and around the country provide inspiration to thousands of potential aerobatic pilots and members. Just ask me sometime where I first saw spectacular aerobatics performed and the effect it had on my life.

EAA and IAC working together has been responsible for our success. I will do everything I can to expand and nurture that relationship while I am in office, since I have a keen appreciation of where we came from and how we got here.

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

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

Brittany Nielsen Named IAC Achievement Awards Chair

Brittany Nielsen

Brittany Nielsen, IAC 437631, has been appointed chair of the IAC Achievement Awards Committee. Brittany is from Rice Lake, Wisconsin. She is married to Grant Nielsen, who recently competed at the U.S. Nationals in Oshkosh in the Advanced category.

Brittany is the associate dean for student affairs and enrollment management for the University of Wisconsin Colleges. In her role, she serves as the campus administrator for UW-Barron County and also the associate dean for student affairs for UW-Barron and UW-Marshfield/Wood County. Brittany has been with the UW Colleges for more than nine years and has worked as a recruiter, orientation director, student life advisor, academic advisor, and assistant dean for student affairs. She is finalizing her dissertation for her educational doctorate in leadership and higher education from Bethel University in St. Paul Minnesota, and has earned her associates degree from UW-Marshfield/Wood County, Bachelor of Science Degree in communication from UW-Stevens Point, and a masters in student affairs and administration from UW-La Crosse.

When she is not in the office, she spends her time flying, announcing air shows, traveling with her husband, Grant, playing with their two rescue dogs, and enjoying water sports and time on the lake.

Welcome, Brittany! ***IAC***

U.S. National Aerobatic lapel pins.

Frank Christensen
2017 Aerobatics Hall of Fame Inductee

ABOUT THE AEROBATICS HALL OF FAME

Forty-five people have been inducted into the International Aerobatics Hall of Fame.

Visit *www.IAC.org/legacy/international-aerobatics-hall-of-fame-honorees* to read their bios and accomplishments.

1987	Jose Aresti Duane Cole Curtis Pitts Frank Price
1988	Marion Cole Mike Murphy Betty Skelton Frankman
1989	Bob Heuer Bevo Howard Harold Krier
1990	Lincoln Beachey Bob Herendeen Charlie Hillard Art Scholl
1991	Mary Gaffaney Leo Loudenslager
1993	Clint McHenry Neil Williams
1998	Bill Barber Rod Jocelyn Harold Neumann Tom Poberezny J.G. "Tex" Rankin
1999	Henry Haigh
2000	Gene Beggs
2001	Mike Heuer
2002	Bob Davis Bill Thomas
2003	Don Taylor
2004	Dorothy Hester Betty Stewart
2005	Patty Wagstaff
2006	Gene Soucy
2007	Debby Rihn-Harvey William K. (Bill) Kershner
2008	William B. (Bill) Finagin
2009	R. A. (Bob) Hoover
2010	Jimmy Franklin
2011	Tony LeVier
2012	Giles Henderson
2013	Bill Adams
2014	Sammy Mason
2015	Sean D. Tucker
2016	Robert Armstrong
2017	Frank Christensen

The Eagles are here!

By Jack Cox

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March 1982 EAA S*port Aviation*

Photos courtesy of
Frank Christensen,
Christen Industries Archive

The CHRISTEN Method

The wonder of all wonders is that the Christen Eagle ever came to exist at all ... or that you ever even heard of Frank Christensen.

At 32 years of age, you see, Frank retired from his first business endeavor, a millionaire many times over. Every penny of it had been earned by assiduous application of his own inventive genius, business acumen, and extraordinary personal energy. He was a living, breathing personification of the American dream, and few could have begrudged him had he chosen to deposit the entire bundle in a Swiss bank account and make a beeline for the French Riviera — which is what most of us would have done.

To fully understand the reasons and reasoning behind Christen Industries you must be conversant with at least a brief outline of Frank's first business.

In the late 1950s Frank was a student at Stanford University — just about the time the semiconductor industry was beginning to emerge from laboratories and garage workshops. He became fascinated with the miniaturization involved, particularly the ultra-miniature tools needed to make things like integrated circuits. He began tinkering with the making of these miniature tools and the machinery that would use them while still in college and, in fact, during his junior year began a small business manufacturing them. An evening and weekend pursue-it-out-of-interest thing while he was still in school, it became his full-time profession after graduation. Called Tempress (derived from temperature and pressure, the processes used in his manufacturing operations), the little company didn't remain so for long. When it was sold in 1971, Tempress consisted of four manufacturing plants employing 600 people ... and was doing about $8 million worth of business each year.

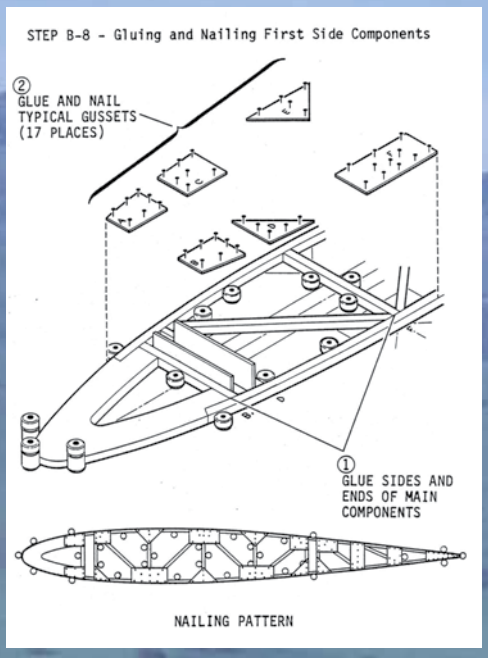
The reason Frank simply cleaned out his desk and walked away from it all one day in 1971 is the key to understanding all that has subsequently transpired: Christen Industries, the Eagles, the Eagles Aerobatic Team, etc. He characterizes the sudden turn in his life thusly:

"I think the thing that makes me tick, the thing that gives me my satisfaction and happiness is the manufacturing business. In the broad sense, I like to see a problem and conceive a product to solve the problem — design the product, develop it, produce it, decide how to promote it, and present it to the marketplace. The whole cycle of creation through marketing is the thing that makes me tick. I sold my first manufacturing business because it got so big that I couldn't be involved anymore. My time was in the office with the attorney, the insurance broker, the personnel manager — leaving me completely divorced from the things that had been so much fun, the design and manufacture and marketing of the product."

And so he made the break, but, again, not for the Riviera. Instead, he scoured the countryside south of San Francisco for a "retirement" home on property large enough to build an airstrip.

"Then, I decided it might be kinda fun to be back in the manufacturing business, but not letting myself get into the trap I was in before where I ended up divorced from the things that made it fun to be in that business.

"I had been making gadgets for my own airplane — inverted oil systems, fuel pumps — and I had been making inverted oil systems for Curtis Pitts. I decided it might be fun to sell those to other builders by means of a little mail order business involving just two or three people. We'd have an



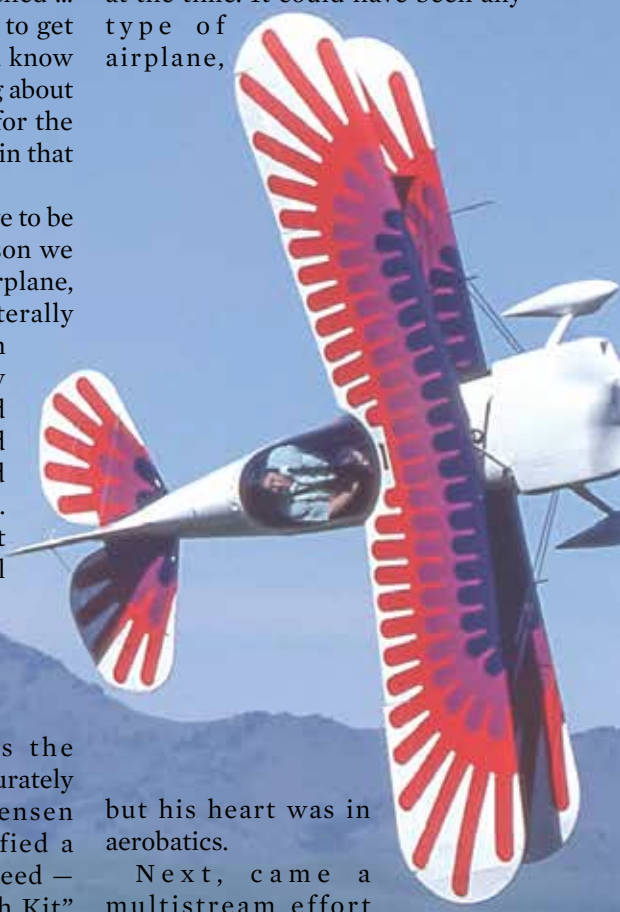
aerobatic seat belt system, an inverted oil system, a little fuel pump system.

"I was an engineer and I was good with my hands, but I would never have dared build my own airplane! That was the most foreign, far-fetched ... I mean, where would you go to get materials and how would you know what to do? There's something about aircraft building technology for the people on the outside looking in that is just unthinkable, you know.

"So, I thought, it doesn't have to be that way. There isn't any reason we couldn't make a Heath Kit airplane, one with which we would literally hold the builder's hand from start to finish so that anybody who ever wanted to could build his own airplane and would have something special and different when he finished. I just got consumed by that concept, and that's where it all started."

The Christensen Method

"Systems approach" is the space-age term that most accurately characterizes The Christensen Method. Frank had identified a problem, or in this case, a need — there needed to be a "Heath Kit" system for building an airplane, one so detailed, so complete, so logically sequenced that a person with absolutely zero experience in building anything could work his way through it and emerge not just with an airworthy airplane, but one of show quality. His conception of a product to fulfill the need was, arbitrarily, an aerobatic airplane — because that was his special interest in flying machines at the time. It could have been any type of airplane, but his heart was in aerobatics.



Next, came a multistream effort that involved designing the airplane, conceiving the building system and the primary teaching vehicle, and devising a marketing plan and a promotion scheme.

All at the same time!

The Computer Speaks

By whatever motivation one is ultimately induced to whip out his checkbook and drop 41 big ones on Christen Industries, the next entity with whom he'll find himself dealing will be the company's all-pervasive computer.

With his background in the microelectronics industry, it could be expected that Frank would set up his business around a computer system. From the beginning of the company, every operation — ordering, inventory, shipping, customer orders, etc. — was programmed and ever after has been directed by a phalanx of integrated circuits, floppy discs, and other assorted electronic wizardry.

For a moment, imagine yourself an Eagle II customer. When your initial order is received, the computer immediately reduces you to an alphanumeric code — something like C-0032 (the thirty-second customer to order with a last name beginning with the letter C) — which becomes your electronic identity in all future dealings with Christen Industries.

The Christen Eagle II is broken down into 28 kits (there are three others that come after the airframe is finished — Flight, Tiedown, and Aerobatic training kits). Each kit has a number, beginning with 901 and ending with 926. The kits are numbered in the sequence that Christen Industries recommends for building the airplane.

Each of the kit series has its own monthly production schedule, originally 10 per month of each but now adjusted to levels that have proven to be more closely matched to customer demand. For example, 901 Ailerons Kit is built in "unlimited" quantities each month, whereas just 10 902 Lower Wing Kits are produced each month. Twenty 903-S Upper Wing Kits are produced each month, and just five 917 Engine

Kits and 919 Propeller Kits are available each month.

Each individual kit within a series is assigned a serial number. For example, the very first 901 Ailerons Kit was Serial No. 1, the second one was Serial No. 2, etc. These serial numbers are used by the computer to fill your order — and is where things really get complex. Because the kits were not created in the beginning in the numerical order (901, 902, 903, etc.) now assigned to them and because some builders have ordered out of the recommended sequence, and, further, because some customers order the whole airplane while others order just one kit at a time at irregular intervals, you get a situation that only a computer could keep track of! I'll take a stab at explaining it with the following example: You send Christen Industries a check for the full amount for the Eagle II. The computer instantly reincarnates you as C-0032, then begins automatically assigning the next available kits in each series to you. The first one, 901 Ailerons Kit, is produced in unlimited numbers, so there's no wait for it. Four hundred ninety (or so) Eagle IIs have been ordered, and all have been assigned the first kit, so you (C-0032) are assigned serial No. 491. It will be shipped to you within days.

The computer then speeds on to the next kit, 902-R Lower Wing Ribs Kit, of which 20 are made each month. For reasons previously mentioned, not as many of these kits have been ordered as have 901, so the next available number is 307. Now, at 20 kits per month, No. 307 is backlogged into the production schedule; it will be made in April of this year. The computer assigns you No. 307 and automatically includes it on the shipping department's schedule for April.

When the computer gets to 902 Lower Wing Kit, you (C-0032) are assigned serial No. 401,

which is scheduled for manufacture in September, because just 10 of them are cranked out each month.

This goes on right down the list — a different serial number for each kit, a different factory delivery date for each kit. And, simultaneously, the computer instructs a word processor to print out a sales order and a shipping order, plus an acknowledgement letter to you indicating that payment has been received, and a listing of serial numbers for each of the kits and the dates on which they will be shipped to you — all within 48 hours of receipt of your check.

I've gone into all this ordering/accounting department detail so that you will understand why when I tell you that, at present, you cannot drive a truck up to Frank Christensen's loading dock, waltz in and present him a check for $41,765, and watch as all 31 kits are immediately loaded into your vehicle. The business is simply not set up that way.

Christen Industries is almost exclusively a mail-order business. There are no local dealers or regional distributors and thus no warehousing of vast quantities of kits to support its sales efforts. There are two reasons for this: First, the investment in stocked items would be astronomical, and, second, since warehoused goods are normally purchased with borrowed money, interest charges would be unthinkable at current rates. Perhaps even more important, however, is Frank's absolute insistence on keeping the business at a level in which he can still be involved in all its workings. By scheduling only so many of each kit per month, he avoids expensive warehousing and, with his computer, can keep tabs on everything personally.

Construction Manuals

Then there are the Christen construction manuals — unquestionably the best ever produced for a homebuilt airplane building project. Most of you have seen them at the Christen booth at Oshkosh, so you know they are first cabin all the way. The graphics and the quality of the materials used are just further manifestations of that touch of class Frank makes a part of every phase, every item in the Christen enterprise.

There are no plans or blueprints for the Christen Eagle. An untrained person must learn to read engineering blueprints before he can begin building many homebuilts, but the only prerequisite for using the Christen manuals is the ability to read, period. Every page represents a small, simple step, and every operation and/or manipulation required is explained in extreme detail. Absolutely nothing is left to one's imagination or misinterpretation. Of extreme significance is the fact that every step in every manual is properly sequenced — so that one never builds component A only to find he will have to tear it apart to attach a fitting from component B that will be built later. And when the step on a given page is completed there is a block to check

— important if one has to stop work for a week or so (like going to Oshkosh) and later needs to be reminded of where he left off.

Of particular help to the first-time builder are "mini-courses" scattered throughout the manuals wherever a special skill is encountered for the first time. Detailed, "entry level" explanations are presented on things like use of Clecos, gluing and woodwork procedures, AN hardware standards, tube-cutting procedures, and many, many more. All-in-all, the manuals represent a comprehensive course in airplane construction rather than simply a "how to" set of instructions for building a Christen Eagle II.

Ask any Eagle builder about the service he's received from Christen Industries, and invariably he'll mention the literal blizzard of manual revisions that have inundated him from the day he placed his order. Every month, in fact, Frank and his staff review every manual to determine if changes are necessary in light of feedback they get from builders, their own experience, and other sources. Once the revision has been approved, written, and printed, it is mailed out to a computer-derived list of those due it. Every original page and every revision ever written are available and on file at Christen.

Preening an Eagle

Remember how the Christen Eagle II came to the market? In February of 1977 a full-page ad appeared in *Sport Aviation* that put you eyeball to eyeball with a big, mean-looking eagle. "The Eagles Are Coming!" the ad screamed — but that was all. At the bottom of the page was a Christen logo, and nothing more. No address, no phone number to call to satisfy your curiosity ... nothing! This went on, month after month, until Oshkosh when, in fact, the Eagle arrived. Frank and his crew pulled in with the now familiar semi-trucks and proceeded to unload and set up the first of the most lavish display booths we've ever had at Oshkosh. The thing I think shocked people most was that Frank had shown up the very first time out with a totally complete promotion package — the opulent red carpeted booth with fixtures obviously designed for the space assigned them in the display building, the stunning four-color brochures, the construction manuals which anyone could see represented an enormous effort and expense, the Eagle II itself with its spectacular paint scheme and first-class-all-the-way finishing treatment right down to the smallest decal labeling the carb heat knob or whatnot, usually featuring the already ubiquitous Christen logo. Then, before anyone had the opportunity to say, "Okay, Frank, it LOOKS great, but how does it fly?" Bob Herendeen was up during an evening air show putting it through the wringer as only he can. When he taxied in, the great Eagle II debut was complete — the Eagle had indeed arrived!

All this showbiz stuff was but a glittering spoke in a bigger wheel of the promotional aspect of the overall Christen Eagle package. Every phase of it had been thoughtfully conceived, elaborately planned, laboriously produced and, as EAAers at Oshkosh in 1977 could testify, brilliantly executed.

@juliemorgannn

Fourteen years, three months, twenty-six days
until she gets her driver's license.

We all drive. Ford Go Further

The Eagles Aerobatic Team

The most visible aspect of the Christen promotional effort, however, is the Eagles Aerobatic Flight Team. In 1979 Frank pulled off still another tour de force by reaching an agreement with Charlie Hillard, Tom Poberezny, and Gene Soucy which saw them become the Eagles Aerobatic Flight Team. There is no written contract between Frank and the Eagles. The trio came to Hollister, flew the new Eagle I, and agreed to switch to it on the basis of it being an airplane they could fully endorse. That agreement still holds today.

Naturally, the Eagles flew upon the aviation scene in full feather — with their own version of the Eagle paint scheme, a special logo, four-color brochures, colorful flight suits, a full show schedule supported by a national advertising campaign, etc., etc. — the by-now-expected Christen treatment from A to Z.

... And as Time Has Flown By

As of the end of 1981, about 475 Eagle IIs were under construction around the world. One hundred twenty-five were known to be flying, and news of a new one taking wing reaches Christen practically every week now. Undoubtedly because of the nature of the kit, the Eagle completion rate is showing definite signs of being unusually high — perhaps into an unheard of 90 percent range.

Christen manufacturing facilities at Hollister now occupy 40,000 square feet of building area and include complete woodworking, welding, sheet metal, hydroforming, painting, fiberglass, and assembly areas. Less than 30 percent of all Eagle parts are procured from outside sources. And all the facilities, including the normally messy paint booths and welding areas, are left at the end of a working day in the same sort of "cleanroom" condition Frank grew accustomed to when he was in the microelectronics business. In a word, the physical plant is just as much a showplace as the Eagles are showplanes.

The Pursuit of Excellence

Frank Christensen is often described as a "perfectionist," but he doesn't agree with that evaluation. "I don't strive for perfection," he says, "because that's likely an unobtainable condition in so complex an operation as Christen Industries — but I am in the pursuit of excellence." Better than any other commentary on the man and his works, I think that statement sums up Frank Christensen. What he set out to do and what he has achieved is a very special and very unique thing — certainly in the aviation context. He has picked a particular niche in the total aviation spectrum and has brought to bear every resource at his command to do a better job than has ever been done before. In my view, he is to aviation what Colin Chapman is to the automotive world. Like the exotic and very expensive Lotus sports cars and racers, Frank's Eagles are highly specialized, exquisitely crafted machines aimed for a limited, discriminating clientele. As I stated in the introduction to this article, the Christen kit system is at an extreme end of our homebuilt spectrum. It is not typical, it is not intended for the mass market — if such a thing exists. What it is, however, or more precisely, what it has done, has been

not only for sport aviation but for the entire aviation industry. And, we must acknowledge, it is a highly personal standard. Frank probably could have sold just as many Eagles if his brochures were two-color rather than four-color; if his manuals were in plain binders rather than the beautiful, multi-hued versions; even if the now legendary razor blade had been left out of each marvelously packaged kit ... and on and on. You can cite a hundred ways he could have cut comers and still have had a successful business, but it just wouldn't have been Frank. The company, its methods of operation, and its products are, quite obviously, material extensions of their creator.

Not too many generations ago, companies and institutions liked to have mottos that stood as symbolic beacons to guide them to success in their lives and endeavors. If Frank ever carved a legend above the door of Christen Industries, I think it would have to be: "In Pursuit of Excellence." ***IAC***

N2FC
A single airplane that revolutionized aircraft kit building. The original Christen Eagle II prototype flies above the rolling hills near Hollister, California.
Photo courtesy Frank Christensen.

EVAN PEERS

Building the Christen Eagle II

Conclusion

BY CAMERON GROSSL
IAC 435521

EVAN PEERS

At the end of my last article, I was getting close to finishing up the paint process on my Eagle. It took another couple of months, but I finally got everything painted in March 2017. The painting process was, by far, the most labor-intensive part of the build. I think the next one I do will be better, but I'm still pleased with how the paint job turned out, especially considering I had never painted an airplane before.

Once everything was painted, it was time for final assembly. I preassembled the airplane last year, so this was a task with which I had some prior experience. For the most part, it went pretty smoothly and was a lot of fun. I finally got to see the airplane that I had only been able to see in my mind come to life.

At some point soon after this, it was time to hear this thing run for the first time. All went well. The engine started right up. If you're curious, you can see it here: *Youtu.be/LkwdMNv-ct4*.

Final assembly proceeded quite well. You don't realize how many little things have to be done before an airplane is ready to fly until you do it. I didn't have the Christen instrument panel labels, so I thought I'd just make my own; I wanted a little different look from what the factory placards offered anyway. I bought a Cameo Silhouette vinyl cutter and proceeded to teach myself how to cut vinyl. Drawing all of the various labels and placards took quite a bit of time, and learning to use the vinyl cutter to make the labels took quite a bit of trial and error. I'm happy with the end result, but I would have been better off just sending all of the label and placard work to the local sign shop.

CAMERON GROSSL PHOTOS

Final assembly begins.

EAA has a packet of materials it sells to homebuilders who are nearly ready to get their airplane inspected by the FAA or a DAR. It's a great packet that includes a checklist for everything you need to do, including all of the paperwork with examples of how to fill it out. I used it, and it worked quite well for me. A friend recommended Jim Auman to me for DAR services. Once I had everything ready, he came out, looked over my airplane and the paperwork, and awarded me an airworthiness certificate! I think most builders are very apprehensive about inspection day, but it really isn't anything to be afraid of as long as you do your homework ahead of time and know what the requirements are.

It's Time to Fly the Airplane

I've always been one who likes to be prepared, and I went to great lengths to be sure that I was ready for the first flight of N216HP. I got several friends to help me look over the airplane. I made up a set of test cards with goals for each flight and places to record data as I gathered it. Advisory Circular 90-89B and the Christen manuals were great resources for making up the test cards. I went to Nashville and flew with Steve Johnson in his MX2 to help me prepare for my first flight in the Eagle. I had flown some here and there during the build process, but I could not say that I was current. Flying Steve's MX was an eye-opening experience to say the least. I can't say that I've ever felt so behind an airplane — everything happens fast! But it was a good exercise, and I felt ready when it was time to fly the Eagle.

Then it was time for the big day. I had a friend at the airport to work the radio and my wife and her parents on the ground if anything went wrong. We had a thorough briefing on what might happen, what my plans were for those scenarios, and emergency procedures. I think my ground crew may have thought

CAMERON GROSSL

It runs!

that I was going a little too far with all these plans, but it makes me feel better when I have all my bases covered. Finally on May 13, 2017, after three and a half years and 3,500 to 4,000 hours of work, I got to make the first flight in N216HP. All went well. The airplane flew straight, with only a slight left-wing heaviness. The engine stayed within its temperature limits. The radio didn't work so well. The first landing was acceptable and the airplane rolled out very nicely, and I loved how it flew. If you're curious, you can see a few

first flight clips at *Youtu.be/thVMLiyqijo*. My in-flight video camera failed, but my ground crew managed to get some footage I was able to piece together.

I get asked a lot how nervous I was on the first flight. There were definitely some nerves there, but mostly I would describe myself as being in a state of hyper-awareness. Whether or not that was good, I don't know. I was so focused on some aspects of the airplane and what it was doing that I ignored others. Luckily I had someone on the ground to prompt me for engine temperatures, pressures, etc. All in all, I'd say that building your own airplane and taking it to the sky for the first time is very rewarding. It is definitely one of the things I am most proud of in my life. It's so cool to sit in the hangar and look at the airplane and think to yourself, I built that.

Showing It Off

Now that the airplane was flying, it was a race against time to get my 40 hours flown off in time to fly to EAA AirVenture Oshkosh 2017. I had a little more than two months to get it done. I'd like to say that everything worked perfectly and I just had to put fuel and oil in the airplane and fly it, but I can't. There were some minor issues along the way. I had radio and transponder problems to work out. My fuel sight tube didn't work right. I had to readjust the rigging every now and then as the airplane settled in. I had to change out the starter because of a clearance issue, etc. Nothing major, but I stayed busy correcting minor squawks along the way. I stayed pretty close to my test card plans during the first 25 hours or so. I collected data on best rate of climb, best rate of descent, fuel burn rates, etc. I test-flew all of the aerobatic maneuvers I would be certifying the airplane for. I tested several loading scenarios with the CG in its most forward (or as far forward as I could get it) and its most aft positions. Basically I had to explore the entire flight regime before I could make an entry in the logbook that stated its flight parameters.

With just a few days to spare, I made it to 40 hours in time to leave for AirVenture, and the Christen Eagle's 40th anniversary. My dad was to be my first passenger, and being a trusting person he got in the airplane not for a quick ride, but for a trip from Kentucky to Oshkosh. Weather was an issue, and instead of the three-and-a-half-hour planned trip, it took us more like six hours. The airplane did well. It's a decent cross-country airplane, and it is pretty comfortable; you just can't carry much baggage.

The overall Oshkosh experience was pretty awesome. I had been there once before, but it was cool to fly there in an airplane that I built. There was an excellent turnout of Eagles for the 40th anniversary celebration. I got lucky and was parked right up next to the IAC building. It caught me off guard how many people had been watching my build thread on the Biplane Forum. I had countless people walk up to me while I was at Oshkosh to ask about the airplane and tell me how much they liked following along with the build process. I'm normally a quiet person, but both my wife and my dad commented on how social I was while we were at Oshkosh. AirVenture was a great way to cap off the airplane building experience. Having it happen in the same year as the 40th anniversary of the Christen Eagle was just icing on the cake. I had a great time and met a lot of great people.

CAMERON GROSSL PHOTOS

Pictures from the trip up to Oshkosh with my dad. Note the weather in both of them.

Direct to Competition

As if this year hadn't been exciting enough, I also got back into IAC competition. My ultimate goal was to come to Oshkosh again to compete in the U.S. Nationals. Since I had been away from flying competition for so long, I stayed in Sportsman. My first contest was the Hoosier Hoedown in Kokomo, Indiana. The first contest back went well; I finished in first place.

For the second trip to Oshkosh for Nationals, the weather was much more cooperative. My wife rode up

CAMERON GROSSL PHOTOS

N216HP at AirVenture Oshkosh 2017.

with me; until then she had only ridden in the airplane for a couple of half-hour rides. The weather was clear, but it was a hot ride up. Nationals started out as an intimidating experience. I was sure the competition was going to be stiff, and I couldn't help but wonder if I was going to be anywhere close to being competitive. For the first flight out, I was more nervous than usual. I had intended to start out in the middle of the box, but I goofed up and started about three-quarters of the way back, and the wind was out of the south. It never crossed my mind to go around and restart. From that point on, I thought I was behind the airplane, and I wasn't thinking my way through things like I usually do. It was an awful-feeling flight.

Nobody was more surprised than I was when I saw that I won the first flight. I figured for sure that I would be mid-pack at best. So now I was thinking, if I flew that bad on the first flight and I know that I can do a lot better, then maybe I've got a shot at winning this thing. So, on the second flight I went in with much more confidence, and to me it was much cleaner than the first flight. The judges didn't agree, and I dropped to second place. For the third flight, we had a strong wind blowing us toward the judges. I underestimated it, and despite managing to stay in the box, a good part of my sequence was in the forward third of it. It was not a good-feeling flight. This time the judges did agree, and I ended up fifth overall. I made many mistakes, but I think the biggest was flying the Known three times rather than coming up with my own Freestyle. I never really paid attention to how much of an advantage flying a Freestyle in Sportsman is, but live and learn. I still had a great time and a great experience. Finishing fifth in the U.S. Nationals really isn't that bad, but I know I can do better.

The last few years have been a blur for me. I put almost all of my free time into building my Eagle. To say that I was (am) obsessed would be a gross understatement. I was on a mission to get this thing done, and I did it. Luckily, I had a lot of help along the way, too. My dad was always willing to drive two hours to my house to spend all day helping me, then drive two hours back home. My wife was always around to help me turn over a wing or a fuselage, etc. She never once complained about having our spare bedroom filled with airplane parts, me painting in the garage and cleaning out the paint gun in the kitchen sink, or me spending every spare minute I had out in the garage or at the airport trying to get this thing done.

At any rate, it's been a really fun and rewarding project. I'm going to build myself a new 1949 Chevy truck next, but I also think I've got another airplane in me. IAC

U.S. National Aerobatic Championships, Final Results

September 23-29, 2017
Oshkosh, Wisconsin

Primary Power

Rank	Pilot	Aeroplane	Registration	Known #1	Known #2	Known #3	Totals	O/all %
1	Elise Wheelock	8KCAB	N-318JR	505.84	483.99	484.13	1473.96	80.544
2	Jarrett Croy	8KCAB	N-317JR	503.77	474.51	472.43	1450.71	79.274
3	Jeff Batzer	Pitts S-2A	N-80003	476.19	477.36	486.04	1439.59	78.666
4	Giles Henderson	Cassutt Racer	N-429PM	466.57	457.59	477.79	1401.95	76.609
5	Jacob Githens	8KCAB	N-317JR	504.38	413.03	475.41	1392.82	76.111
6	Dustin Lenz	Decathlon	N-317JR	491.27	449.97	448.41	1389.65	75.937
7	Elizabeth Birch	8KCAB	N-317JR	376.48	482.64	497.17	1356.28	74.114
8	Dennis Flamini	Acro Sport II	N-57DF	313.88	421.35	349.11	1084.34	59.253

Sportsman Power

Rank	Pilot	Aeroplane	Registration	Known	Free #1	Free #2	Totals	O/all %
1	Larry Ernewein	Bucker Jungmann	C-FLAE	1054.23	1136.43	1159.19	3349.85	80.332
2	Shaun Brautigan	Extra 330	N-341LX	1051.94	1106.13	1123.92	3281.99	78.705
3	Alex Tally	Decathlon	N-317JR	1100.49	1080.64	1096.04	3277.17	78.589
4	Pablo Branco	DR-107	N-95HB	978.31	1113.21	1121.77	3213.29	77.057
5	Cameron Grossl	Christen Eagle	N-216HP	1114.07	1073.28	1025.55	3212.91	77.048
6	Alex Hunt	8KCAB	N-317JR	1052.18	1043.87	1103.28	3199.32	76.722
7	Adam Messenheimer	Pitts S-2C	N-725AM	1027.67	1103.87	1054.54	3186.07	76.405
8	Greg Stringer	Bucker Jungmann	N-1131J	1013.80	1059.16	1089.35	3162.30	75.835
9	Jason Noll	Pitts S-2B	N-595BS	1016.51	1032.64	1027.42	3076.57	73.779
10	Paul Funk	Pitts S-1S	N-62DR	977.75	1046.41	1039.19	3063.35	73.462
11	Mitchell Oswald	8KCAB	N-317JR	1033.75	1009.81	957.16	3000.72	71.960
12	David Lutes	Pitts S-1T	N-49307	920.62	771.12	1074.91	2766.65	66.347
13	Galen Killam	RV-8	N-74WW	862.12	425.35	870.78	2158.25	51.757
14	Charles Sikes	Pitts S-2A	N-80003	952.54		1010.38	1962.92	47.072

Intermediate Power

Rank	Pilot	Aeroplane	Registration	Known	Free	Unknown	Totals	O/all %
1	Mark Budd Sr	Extra 330LT	N-	1428.96	1644.11	1329.62	4402.68	76.435
2	Tom Rhodes	CAP 232	N-232LR	1430.51	1625.72	1311.89	4368.12	75.835
3	Mark Budd Jr	Extra 330L	N-330ML	1376.31	1624.81	1318.77	4319.89	74.998
4	Cory Johnson	Pitts S-1C	N-2826	1361.01	1566.81	1342.53	4270.35	74.138
5	Stephen Fiegel	Extra 300L	N-77KW	1458.17	1471.63	1333.14	4262.93	74.009
6	Weston Liu	Pitts S-2A	N-78PS	1364.23	1545.92	1300.79	4210.94	73.107
7	Antonio Davila	Pitts S-2B	N-260ES	1372.57	1527.85	1258.55	4158.97	72.204
8	Luke Penner	Pitts S-2B	C-FDRY	1489.86	1587.71	1080.90	4158.47	72.196
9	Mathieu Barbin	Christen Eagle	N-72WM	1289.46	1527.24	1242.13	4058.83	70.466
10	David Prather	Staudacher 600F	N-252CW	1369.28	1597.53	1074.44	4041.26	70.161
11	William Ludwig	Pitts S-1T	C-GBKF	1362.46	1421.60	1237.02	4021.09	69.811
12	Justin Hickson	Pitts S-2B	N-79AV	1425.63	1372.08	1095.75	3893.46	67.595
13	David Underwood	Extra 200	N-9PB	1413.92	1245.13	1223.58	3882.63	67.407
14	Kevin Elizondo	Extra 300S	N-434TJ	1151.21	1556.88	1156.73	3864.82	67.097
15	James Jacobson	Extra 300L	N-117CV	1351.10	1535.49	948.36	3834.95	66.579
16	Larry Macon	Pitts S-2A	N-80003	1202.91	1523.16	970.26	3696.33	64.172
17	Bill Gordon	Pitts S-2B	N-5310S	1165.08	1451.85	960.72	3577.64	62.112

Advanced Power

Rank	Pilot	Aeroplane	Registration	Known	Free	F/Unk #1	Totals	O/all %	F/Unk #2	Totals	O/all %	Rank
1	Aaron McCartan	Panzl S-330	N-330LS	2260.11	2583.56	2437.60	7281.27	80.102	2932.15	10213.42	80.995	1
2	AJ Wilder	Extra 330SC	N-66941	2271.20	2467.18	2401.71	7140.09	78.549	2590.40	9730.49	77.165	2
3	John Wacker	Extra 330SC	N-393WW	2096.82	2499.30	2370.92	6967.03	76.645	2570.32	9537.35	75.633	3
4	Matthew Dunfee	Extra 300	N-302NL	2052.32	2518.77	2354.92	6926.01	76.194	2344.31	9270.32	73.516	5
5	Gerald Molidor	Sukhoi 29	N-711SU	2287.41	2567.51	2056.23	6911.15	76.030				
6	Angelo Cillaroto	Extra 330SC	N-330RT	2217.61	2392.13	2280.03	6889.78	75.795	2018.29	8908.07	70.643	9
7	Marty Flournoy	MX2	N-540RH	2184.36	2370.68	2313.53	6868.57	75.562	2653.41	9521.98	75.511	4
8	Brent Smith	Pitts S-1S	N-466YY	2162.46	2446.20	2234.51	6843.16	75.282	2264.90	9108.07	72.229	7
9	Stanley Moye	Extra 330SC	N-919GM	2178.62	2511.74	1924.93	6615.29	72.775	2534.05	9149.34	72.556	6
10	Jason Flood	Pitts S-1S	N-907MG	2121.68	2359.65	2108.61	6589.94	72.497	2121.71	8711.65	69.085	11
11	Andy Ernewein	Pitts S-1S	C-FSUP	2153.70	2188.70	2218.85	6561.25	72.181	2370.98	8932.23	70.834	
12	Dave Scott	Pitts S-1S	N-8962M	2049.92	2465.04	2035.77	6550.73	72.065				
13	Michael Lents	Extra 300L	N-117CV	1808.20	2527.23	2212.23	6547.65	72.031	2443.07	8990.72	71.298	8
14	David Taylor	Staudacher 600F	N-27KJ	2119.42	2396.89	2026.97	6543.29	71.983	1217.09	7760.38	61.541	
15	Michael Tryggvason	Giles G-202	C-GXGS	2027.23	2364.23	2117.38	6508.84	71.604	2765.72	9274.56	73.549	
16	Jeffrey Petrocelli	Extra 200	N-87KC	1914.38	2438.42	2011.23	6364.03	70.011	2339.40	8703.43	69.020	12
17	Christopher Magon	Extra 300S	N-65EX	2172.71	2399.56	1733.66	6305.93	69.372	2307.02	8612.96	68.303	13
18	Mark Fullerton	Panzl S-330	N-330PG	1474.15	2445.13	2334.50	6253.78	68.798	2587.50	8841.29	70.113	10
19	Alain Aguayo	Giles G-202	N-202GP	2139.25	1919.87	2008.10	6067.22	66.746	1972.44	8039.66	63.756	
20	Michael Forney	Pitts S-1T	N-49306	2117.71	2086.62	1846.36	6050.69	66.564	2230.67	8281.36	65.673	
21	Peter Gelinas	Giles G-200	N-265W	2077.82	2279.34	1644.89	6002.06	66.029				
22	Mario Mena Marqua	Extra 330SC	N-669AJ	1649.17	2273.42	1889.17	5811.76	63.936	1880.48	7692.24	61.001	15
23	Grant Nielsen	CAP 232	N-232ES	1933.08	2381.31	1438.57	5752.96	63.289	2243.82	7996.78	63.416	14
24	Christopher Combs	Extra 330SC	N-35072	1216.03	2366.18	2127.94	5710.14	62.818				
25	Dick Fennell	MXS	N-530JK	1635.11	1209.72	1817.31	4662.13	51.289	1484.07	6146.21	48.741	16

Unlimited Power

Rank	Pilot	Aeroplane	Registration	Known	Free	Fr/Unkwn	Totals	O/all %
1	Rob Holland	MXS	N-540JH	3203.02	3631.49	4069.57	10904.08	78.503
2	Goody Thomas	Extra 330SC	N-580BG	3135.37	3555.04	3977.57	10667.98	76.803
3	Craig Gifford	Extra 330SC	N-260DD	3299.26	3506.24	3454.29	10259.78	73.865
4	Foster Bachschmidt	Extra 330SC	N-330FB	3170.43	3363.28	3693.54	10227.26	73.630
5	Robert Armstrong	CAP 231EX	N-3434F	3146.46	3172.77	3259.85	9579.08	68.964
6	Jim Bourke	Extra 330SC	N-331FZ	2741.38	3200.49	3075.09	9016.95	64.917
7	Yuichi Takagi	Pitts S-2S	N-8061J	2788.33	2609.99	2997.35	8395.68	60.444
8	Krysta Paradis	DR-107	N-75KA	2600.16	2552.10	2214.18	7366.44	53.034
9	Adam Cope	DR-107	N-75KA	1889.11	2557.97	1541.45	5988.53	43.114
10	Robbie Gibbs	Edge 540	N-540DT	1717.46	2087.65	2053.97	5859.08	42.182
11	Hugo Ritzenthaler	Pitts S-1E	N-96HH	930.37	1617.21		2547.58	18.341

Sportsman Glider

Rank	Pilot	Aeroplane	Registration	Known	Free #1	Free #2	Totals	O/all %
1	Jon Clegg	DG1001	N-501DG	1100.27	1077.37	1069.26	3246.90	69.826
2	Vincent Sabin	DG1001	N-501DG	1079.41	1037.57	1075.20	3192.18	68.649
3	Arturo Landaure	Swift S-1	N-113TX	1050.93	1134.61	911.36	3096.91	66.600
4	Cody Donald	TG-16A	N-1AT	1048.04	910.60	1034.33	2992.98	64.365
5	Garrett Patnode	DG1001	N-501DG	728.19	870.20	1044.63	2643.02	56.839
6	Laura Radigan	Swift S-1	N-113TX	952.06	1141.31	538.55	2631.91	56.600
7	Kyle Vonnahmen	DG1001	N-501DG	896.76	895.24	808.61	2600.61	55.927
8	Maeve Daw	DG1001	N-501DG	604.07	536.90	854.57	1995.53	42.915

Intermediate Glider

Rank	Pilot	Aeroplane	Registration	Known	Free	Unknown	Totals	O/all %
1	Matt Correa	DG1001	N-501DG	914.58	1096.78	984.99	2996.35	64.856
2	Merrick Isley	DG1001	N-501DG	1025.37	897.41	962.96	2885.74	62.462
3	Benjamin Hook	DG1001	N-501DG	1036.03	923.28	872.27	2831.58	61.290
4	Kyle Smith	DG1001	N-501DG	756.10	966.07	922.90	2645.08	57.253
5	Kaitlyn Brown	DG1001	N-501DG	691.89	1039.76	792.92	2524.57	54.644
6	Joshua Holden	DG1001	N-501DG	647.25	767.86	766.52	2181.63	47.221

Advanced Glider

Rank	Pilot	Aeroplane	Registration	Known	Free	Unkwn #1	Totals	O/all %
1	Sasa Marvin	Swift S-1	N-113TX	1622.17	1525.86	1373.07	4521.10	77.549
2	Nicholas Cottrell	Swift S-1	N-113TX	1421.20	1582.21	1382.29	4385.70	75.226
3	Gregory Aldrich	MDM-1 Fox	N-106MG	94.34			94.34	1.618

4-Minute Free

Rank	Pilot	Aeroplane	Registration	4m Free	Totals	O/all %
1	Rob Holland	MXS	N-540JH	3427.21	3427.21	85.680
2	Jim Bourke	Extra 330SC	N-331FZ	3097.46	3097.46	77.436
3	Craig Gifford	Extra 330SC	N-260DD	2988.81	2988.81	74.720
4	Robert Armstrong	CAP 231EX	N-3434F	2909.67	2909.67	72.742
5	Goody Thomas	Extra 330SC	N-580BG	2858.69	2858.69	71.467
6	Robbie Gibbs	Edge 540	N-540DT	2822.22	2822.22	70.555
7	Foster Bachschmidt	Extra 330SC	N-330FB	2797.18	2797.18	69.929
8	Yuichi Takagi	Pitts S-2S	N-8061J	2726.37	2726.37	68.159
9	Jason Flood	Pitts S-1S	N-907MG	2513.47	2513.47	62.837

U.S. Nationals Grassroots Medallion - Highest Scoring <180hp . . . . . Elise Wheelock (Primary) 80.54%
Highest Scoring First Time Sportsman . . . . . Arturo Landaure 66.60%
Betty Skelton Trophy - Highest Scoring Woman in Unlimited . . . . . Krysta Paradis 53.03%
Charles "Chuck" Alley Lifetime Old Buzzard Award - Highest Scoring 65+ yrs . . . . . Larry Ernewein (Sportsman) 80.33%
Goodrich Trophy - Highest Placing Non-U.S. Citizen at Nationals . . . . . Andy Ernewein (Advanced) 72.18%
President's Award . . . . . Gary DeBaun, for directing three consecutive U.S. Nationals

Mike Heuer and Gary DeBaun holding his President's award.

Award presenters Patty Wagstaff and Matt Chapman announce the winners, with the ceremony's emcee Tim Just looking on.

Larry Ernewein with his Old Buzzard award and Andy Ernewein with his Goodrich Trophy.

Patty Wagstaff presents Krysta Paradis with the Betty Skelton trophy.

Carolyn Loudenslager, Rob Holland, and Kelly Loudenslager at the awards ceremony.

Arturo Landaure won the Highest Scoring First Time Sportsman award.

Elise Wheelock won the Grassroots Achievement award.

2018 Known Sequences

Challenging, fun, and skillful

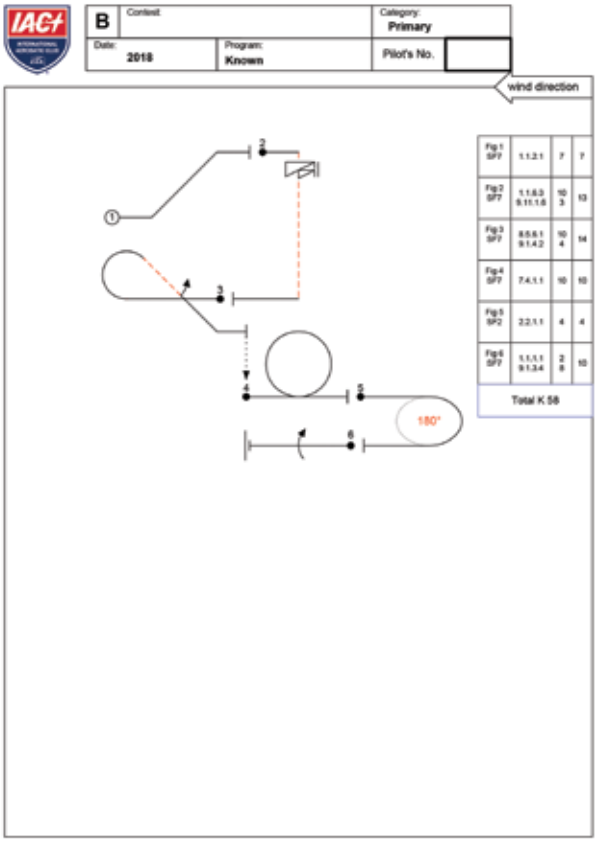
BY BRIAN K. HOWARD, IAC 18414
CHAIRMAN, IAC KNOWN SEQUENCE COMMITTEE

The IAC Known Sequence Committee (KSC) is charged with developing the Known sequences for all power and glider competition categories. An excellent Known design must provide enough challenge that the sequence is fun to fly throughout the year, is not so challenging that it dissuades pilots from competing, and reinforces skills that are necessary to continue growing in the category and that lay the groundwork should the pilot decide to move to a higher category. Sequences must take into account how wind affects airplanes of differing performance while avoiding designs that are beyond the capabilities of the baseline aircraft specified in the IAC *Policy and Procedure Manual*. Above all, the sequences must be safe for pilots of all experience levels. All in all, quite a complex task, and somewhat paradoxically, the lower the category, the more difficult the task.

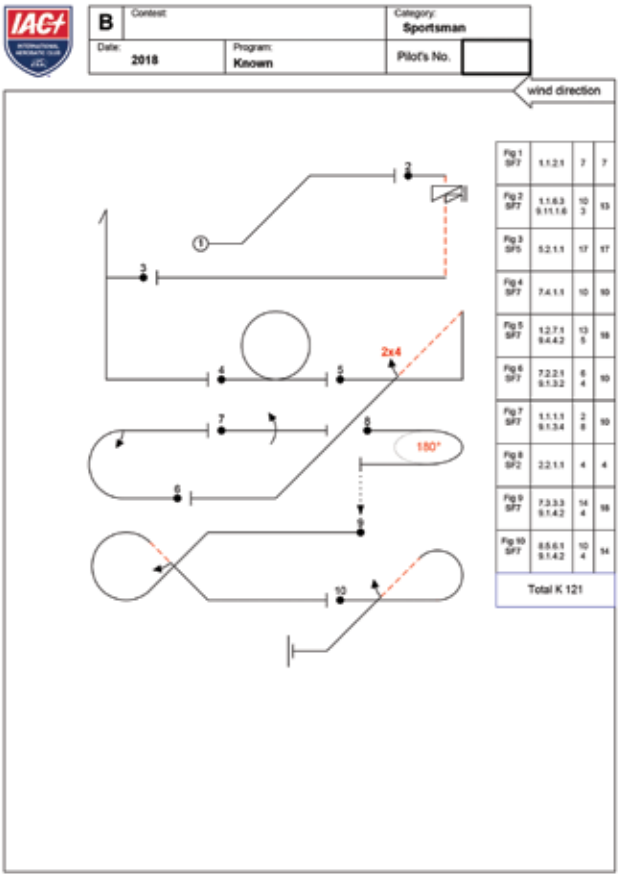
To accomplish this complex task, the KSC is composed of nine individuals, all of whom have extensive aerobatic competition, instruction, and coaching experience. Specific aircraft experience within the KSC ranges from high-drag, low-performance power airplanes such as the Great Lakes and Citabria/Decathlon up to the EXTRA 330SC, and in gliders from the DG-1000 up to the Swift and MDM Fox. The KSC was especially happy to welcome Michael Lents, IAC 434331, to the committee last year. Mike is an MCFI-A and chief instructor for the John D. Odegard School of Aerospace Sciences at the University of North Dakota (UND). The UND program is one of the largest collegiate aerobatic programs in the nation, and Mike's extensive experience with the Decathlon line of airplanes and pilots new to aerobatics is an invaluable resource that ensures the Primary through Intermediate Knowns meet the needs of all IAC pilots and the aircraft most commonly participating in those categories.

Besides applying their knowledge and experience to analyze and "chair-fly" the proposed sequences, some of the KSC members test-fly the Known proposals in the appropriate airplanes to ascertain the suitability of the proposal to the category. Altitude loss, ability to position in the box, energy management, and aircraft ability to perform the proposed figures are some of the attributes tested.

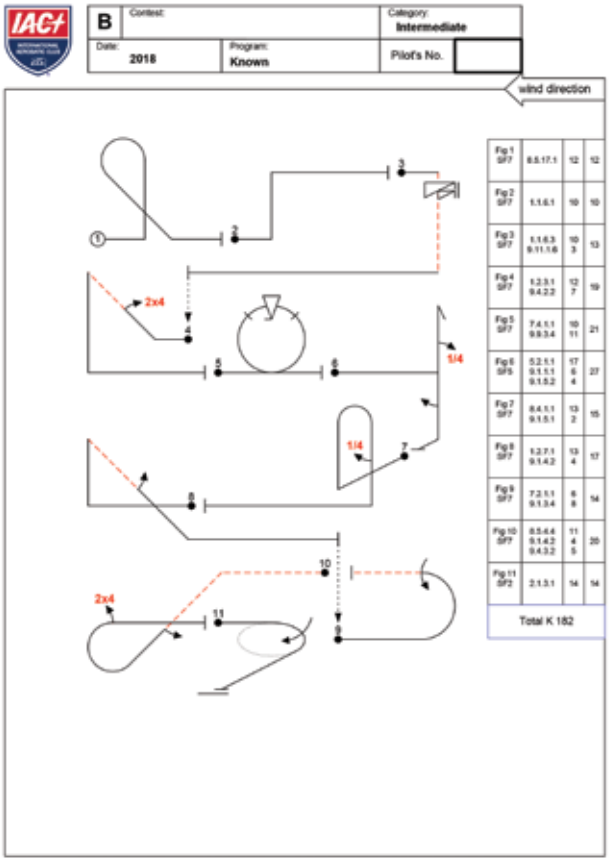
In addition to the KSC members, experts from outside the committee also are occasionally asked to evaluate and/or test-fly certain sequences. One



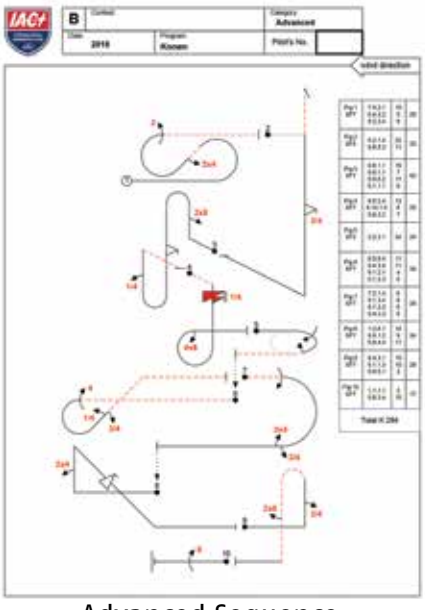
Primary Sequence



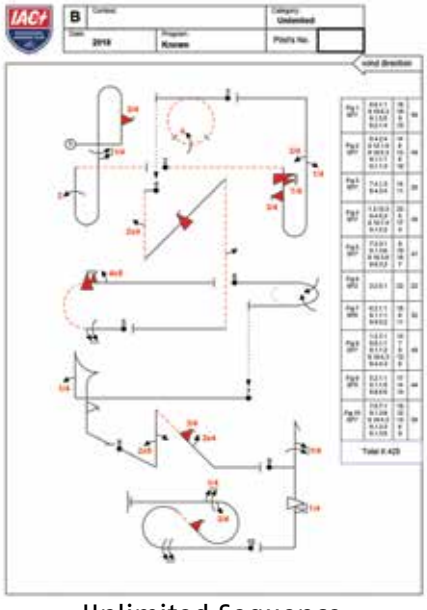
Sportsman Sequence



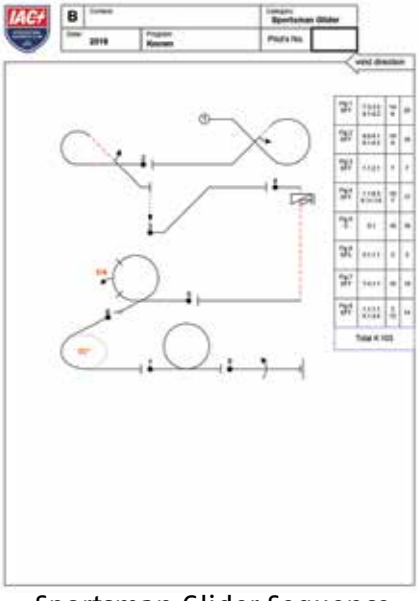
Intermediate Sequence



Advanced Sequence



Unlimited Sequence

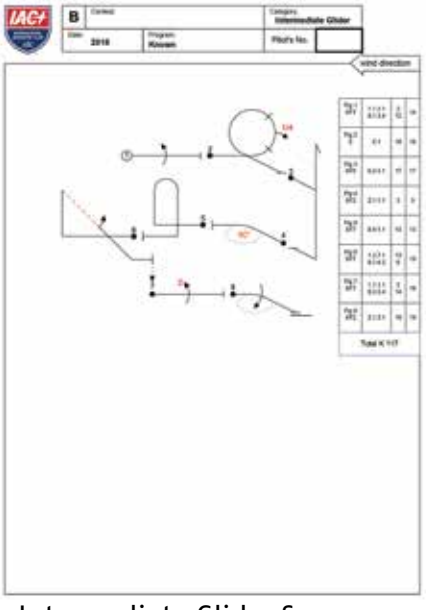


Sportsman Glider Sequence

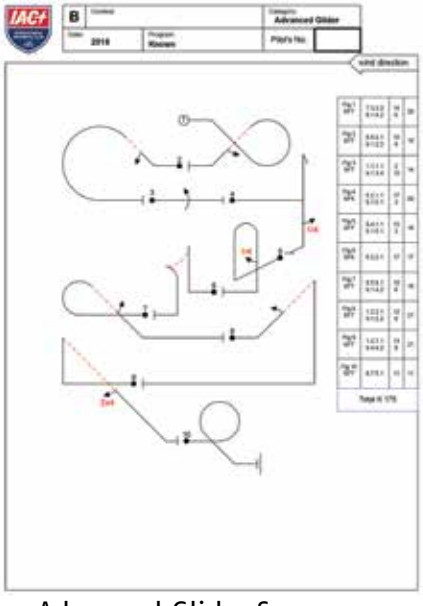
of the most experienced Unlimited pilots in the IAC who flies a Pitts S-1 was asked to evaluate this year's Unlimited proposals, while the Advanced and Unlimited glider sequences were evaluated by not only the KSC's own glider experts, but also four U.S. Advanced and Unlimited glider pilots who have participated in the U.S. National Aerobatic Championships, as well as a Finnish pilot who is the 2016 Finnish Champion and a World Advanced Glider Aerobatic Championships 2016 participant.

This year, 23 Known proposals in power and glider were evaluated and ranked by the KSC. That included 17 Basic sequence proposals across all categories, with the remaining six being variants of those sequences (usually changing some of the complementary maneuvers or rearranging figure order).

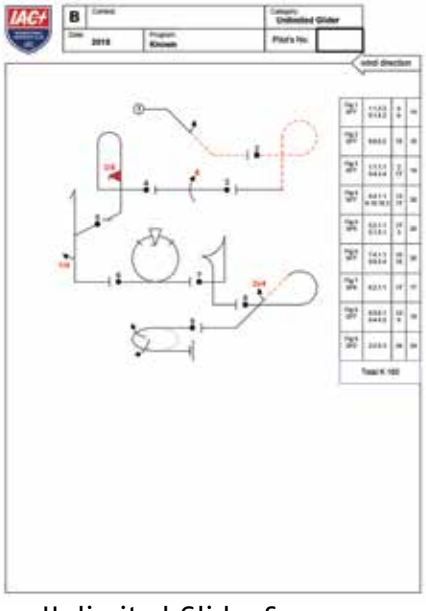
The final proposed IAC 2018 Knowns have all been thoroughly evaluated, vetted, and in most cases, test-flown to ensure they meet every requirement of an excellent Known within the category for which they were designed. Without reservation or caveat, the KSC recommended that each of the proposed Known sequences be approved by the IAC board of directors for the 2018 contest year. The final IAC 2018 Known Sequences, approved by the board of directors, are shown here. *IAC*



Intermediate Glider Sequence



Advanced Glider Sequence



Unlimited Glider Sequence

by GARY DeBAUN, IAC 4145

Zinnia Kilkenny

IAC #	437244
Occupation	Ballet and floor-barre teacher
Chapter affiliation	38 and 49

GD: Zinnia, how did you first become involved in aviation?

ZK: I accepted a "hundred-dollar burger" flight intended for someone else who was afraid to fly. I, too, was apprehensive of flying. However, in the spirit of overcoming challenges head on, I accepted, and continued the flights most weekends with the pilot who took the opportunity to relive in exacting detail his tales and the cast of characters he'd met along the way. He'd always end his stories with, "... and when you get your pilot's license, you'll ...." Finally, after one spectacular night flight, I decided earning a pilot certificate would help me eliminate my fear. What began as a personal challenge grew into so much more.

GD: Why did you decide to become involved in aerobatics?

ZK: My mentor had a deep reverence for aviation. During made-up scenarios, we'd practice wingovers (aka putting our "guns" on "enemy aircraft") while en route to lunch along California's beautiful coastline. Recounting stories of World War I pilots evading enemy aircraft were the rule of the day. Aerobatic seeds were vividly planted early on in my imagination during those weekend flights.

During my student pilot days, I thought I'd try at least one contest to say I did it. I've since competed in 12 contests in the last three years.

GD: When and where was your first contest, and how did it go?

ZK: I approach every contest as though it's my first, but my first was Happiness Is Delano in 2014. My initial lesson, though, was only 10 weeks prior. I battled nausea for the first six, but I felt proud to have placed second overall.

GD: What is your current acro ride? Any changes in the future?

ZK: I'm currently flying a Pitts S-2A. The year 2018 will be when I decide what plane is best suited to take me into Intermediate and Advanced.

GD: Who was your first aerobatic instructor?

ZK: Dave Watson! Dave and I quickly established a symbiotic relationship. He's a focused, disciplined coach; I'm a focused, disciplined student. It was a monumentally excellent decision to train with him.

GD: What is your favorite figure to fly?

ZK: Whichever one I currently find the most challenging. Recently, a whole new repertoire has opened as I've begun practicing for Intermediate and some Advanced. The more challenging the figure, the more exponentially my smile grows. However, even a simple, beautifully executed hammerhead can be gratifying.

GD: Do you have any pre-acro routine like stretching, yoga, or listening to music?

ZK: Absolutely. As a ballet teacher, I also teach a pure alignment method called floor-barre. You'll find me practicing this in the shade under a plane's wing in the California heat so I don't bring tension into the plane.

GD: You are relatively new to the IAC. Is there anything you'd like to see changed?

ZK: As a new judge, I'm formulating some ideas that I'll share in an article for *Sport Aerobatics*.

GD: Who in the sport has been an inspiration to you?

ZK: I like Maya Angelou's quote, "People will never forget how you made them feel." I began aerobatic training immediately after earning my pilot certificate, so I appreciate those seasoned competitors who readily, and without prompting, helped me navigate the contest environment.

GD: Do you have any interests outside of flying?

ZK: There are endeavors other than flying? Semi-kidding aside, yes. I'm an aspiring chef and mixologist (culinary approach to making drinks). I invite guests from the industry to informal competitions, which become quite serious quickly. When I'm not subjecting myself to competition in the air or on terra firma, I spend weekends on the beach with Zero, my Airedale terrier. IAC

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Left to right - Lynn Bowes, Norm DeWitt, Bob Freeman, Tim Just, Ron Schreck, Mike Heuer, Gerry Molidor, Debby Rihn Harvey, Greg Principato, Lorrie Penner, Robert Armstrong, Bob Hart, Mike Rinker and Peggy Riedinger.
(Not present are Rob Holland and Bruce Ballew)

Happy Holidays

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