

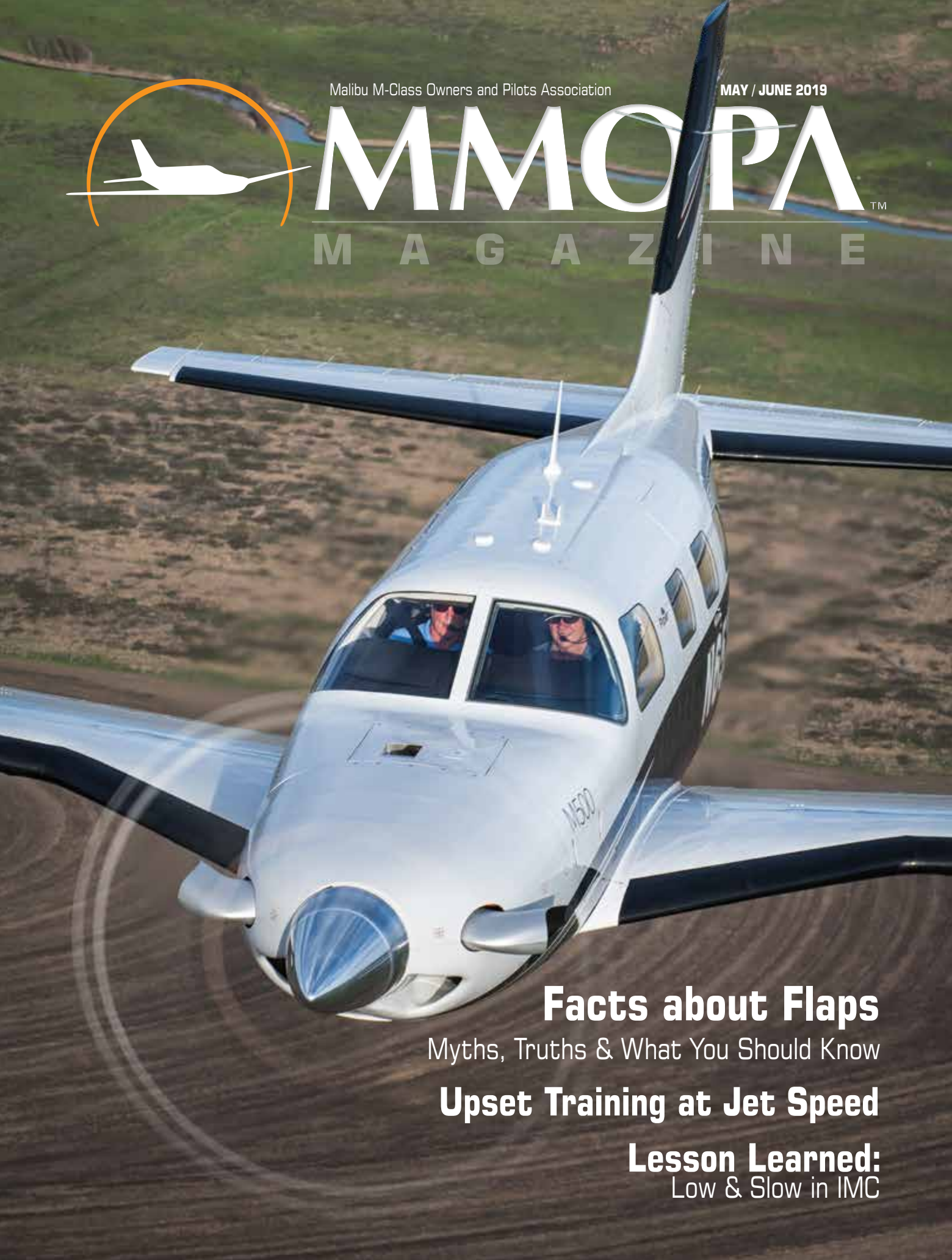
Malibu M-Class Owners and Pilots Association

MAY / JUNE 2019



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**Executive Director and Editor**

Dianne White  
18149 Goddard St.  
Overland Park, KS 66013  
E-mail: [dwhite@mmopa.com](mailto:dwhite@mmopa.com)  
(316) 213-9626

**Publishing Office**

2779 Aero Park Drive  
Traverse City, MI 49686  
Phone: (660) 679-5650

**Advertising Director**

John Shoemaker  
MMOPA  
2779 Aero Park Drive  
Traverse City, MI 49686  
Phone: 1-800-773-7798  
Fax: (231) 946-9588  
E-mail: [johns@villagepress.com](mailto:johns@villagepress.com)

**Advertising Administrative  
Coordinator & Reprint Sales**

Betsy Beaudoin  
2779 Aero Park Drive  
Traverse City, MI 49686  
Phone: 1-800-773-7798  
Fax: (231) 946-9588  
E-mail: [betsybeaudoin@villagepress.com](mailto:betsybeaudoin@villagepress.com)

**Advertising Administrative Assistant**

Erika Shenk  
[erikashenk@villagepress.com](mailto:erikashenk@villagepress.com)

**Graphic Designer**

Michael McCatty

**Printer**

VP Demand Creation Services

**MMOPA Website**

[www.mmopa.com](http://www.mmopa.com)

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# Ready for Amelia Island!



Aviation photographer and MMOPA supporter Glenn Watson (Mach Point One Aviation Photography) shot this two-ship at the Wings Over South Texas Air Show in mid-April.

A few days before I wrote this, I was fortunate to witness the Wings Over South Texas Air Show at the Naval Air Station Corpus Christi, the former home of the Blue Angels. As many of you know, my daughter is currently in naval flight school in Corpus Christi, so it was a special treat to enjoy the weekend with her and several of her flight school buddies.

The highlight of the airshow, of course, was the U.S. Navy Blue Angels. I've seen the Blues fly many times, but it never fails to thrill me. The delta roll, diamond vertical break, and the loop break with the six-plane cross are a few of the maneuvers that are not only big crowd-pleasers but demonstrate the precision and skill of some of our country's best military aviators.

It also served to get me pumped up about our Convention keynote speaker, former Blue Angels commander Russ Bartlett. As impressive as that accomplishment is, it's important to note that it wasn't a straight line from the Naval Academy to Blue Angel No. 1 for Russ. The first aircraft he was assigned was the S-3A Viking anti-sub/refueler aircraft (go look that up), and on his first tour he was the landing signal officer who is responsible for the safe recovery of naval aircraft aboard the USS Nimitz aircraft carrier. (I imagine he's a pretty good judge of what a good landing looks like.)

He was chosen to transition to the F/A-18 Hornet in 1989 and went on to fly 33 combat sorties during Operation Desert Storm. In 1999, he assumed command of the Strike Fighter Squadron VFA-195, where he remained until he was selected to lead the Navy's elite demo squadron, the Blue Angels.

*Continued on page 7*



# Contents

## Malibu M-Class Owners and Pilots Association

May / June 2019 • Volume 9 Issue 3

- 3 Executive Director's Note**  
Ready for Amelia Island!  
by Dianne White
- 6 MMOPA Member Guide**
- 7 Welcome New MMOPA Members**
- 8 President's Letter**  
Three things to remember  
by Randy James
- 10 MMOPA Partners**
- 12 Member Spotlight**  
Meet M500 owner-pilot Nancy Auth
- 18 Facts About Flaps**  
Myths, truths and what you should know about this lift-producing device  
by Joe Casey
- 22 Upset Training at Jet Speed**  
Training in an L-39 jet provides unique advantages for PA46 pilots.  
by Bill Janss
- 28 Lesson Learned, Lesson Shared**  
Low and slow in IMC  
by Peter Yarrow
- 30 The Life of an Adventure Flyer**  
What it's like to own a Piper M350 and an ICON A5
- 34 Piper Authorized Domestic Service Centers**
- 36 Charitable Flying**  
Volunteer pilots save lives through the power of aviation  
by Daniel Kukla
- 44 Hot Off the MMOPA Hotline**  
by Kevin Mead
- 49 Memory Items**  
M-Class helps members progress toward their Master Aviator Wings

Cover & Table of Contents Photos: Glenn Watson, Mach Point One Aviation Photography, photographed member John Walters' M500. John bid and won air-to-air photoshoot at the 2018 convention charity auction benefitting the MMOPA Safety & Education Foundation.

# MMOPA Member Guide

## Malibu M-Class Owners & Pilots Association

18149 Goddard St.  
Overland Park, KS 66013  
[www.mmopa.com](http://www.mmopa.com)  
[mmopasafety.org](http://mmopasafety.org)

MMOPA Executive Director  
**Dianne White**  
[dwhite@mmopa.com](mailto:dwhite@mmopa.com)

The Malibu M-Class (MMOPA) is a not-for-profit organization dedicated to the interests and safety of owners and pilots worldwide who fly PA46 derivative (Malibu, Mirage, Meridian, JetPROP, Matrix, M350, M500 & M600) aircraft. MMOPA was founded in 1988, and now serves nearly 1,000 members. MMOPA is not affiliated with the Piper Aircraft, Inc., or any other manufacturer/vendor.

Membership is available to any registered or prospective owner and/or operator of qualified aircraft or any qualifying individual or organization involved with or providing a service for the PA46 family of aircraft. Dues are \$250 annually and includes a subscription to MMOPA Magazine, access to the MMOPA members website and forums, Jeppesen subscription discounts, and eligibility to attend MMOPA events and activities (additional fees may apply to some events).

### Member-Only Benefits & Services

**MMOPA ONLINE FORUMS:** One of the most active online forums in general aviation, the MMOPA forums has dozens of messages posted each day. It is the ideal place to discuss ownership, safety, operational and maintenance topics, absorb information or get any question answered.

**MMOPA HOTLINE:** Members have access to experts to answer questions regarding airframe/engine, avionics, legal issues and general membership.

**MMOPA LIBRARY:** The MMOPA website has an in-depth library with a variety of maintenance instructions and

best practice documents, checklists, POH's and guides. In addition, there are training and safety content, Service Bulletin information and back issues of MMOPA Magazine. New resources are continually added and updated.


**ANNUAL CONVENTION:** Each year, PA46 pilots and enthusiasts gather for a four-day event featuring seminars, vendor trade show and social activities. The convention is open to MMOPA members and nonmembers.

**MMOPA SAFETY & EDUCATION FOUNDATION:** A 501(c)(3) charitable entity, the Foundation is an independent entity that is dedicated to engaging with MMOPA members to help them operate their PA46 aircraft in the safest possible manner. The foundation's sole purpose is to promote, support and fund safety initiatives, programming, resources and tools. In addition, it may include direct vouchers to MMOPA members who attend qualifying training programs.

**JEPPESSEN SUBSCRIPTION DISCOUNT:** Members receive a 15-month subscription for the price of a 12-month subscription. The savings alone more than cover the cost of MMOPA's annual membership dues.

**MMOPA TRAINING DIRECTORY:** MMOPA Vendor Members who have represented that they offer type-specific initial and recurrent PA46 training with an insurance-approved syllabus.

**RACE INITIATIVE:** MMOPA and Piper Aircraft have developed a means for members to submit input to the Piper RACE Team (Reliability of Aircraft & the Customer Experience). This is a streamlined mechanism for real-world user experience from members to be provided to decision makers at Piper, for the purpose of making product design changes that benefit the PA46 fleet.

**MARKETPLACE:** Members and vendors can list aircraft, parts, services and other aviation related items for sale in this online listing service. 

Continued from page 3


If you haven't watched it, I highly recommend you take the time to view the TV series "Blue Angels: A Year in the Life" on YouTube. (Google the name or type in this url: <https://youtu.be/osPWwQxMEJA>) Russ figures prominently into this Military Channel series, and it is a great portrayal of the leadership, teamwork, precision and commitment required for such a demanding role. There's also plenty of great in-cockpit footage that is fun to watch.

Today, Russ is CEO of Textron Airborne Solutions, a company that provides tactical flight training and adversary aggressor services for U.S. Navy, Marine and Air Force pilots. I look forward to Russ sharing insights that pertain to the way we approach flying our aircraft and lessons we can apply.

In other convention news, we have an outstanding slate of speakers and workshops lined up, and at this writing, the Patty Wagstaff upset training slots are all but sold out. In addition, the pre-convention radar seminar, the companion ground school (with checklists this year), and fun social events will make this can't-miss convention. Furthermore, we will be awarding our first class of Master Aviator wings. Can three days change the way you approach flying? I can say with confidence, yes.

## Thank you to our Partners

You may notice there is a new page in the magazine featuring our valued MMOPA Partners. For many years, MMOPA has been fortunate to be supported by loyal sponsors of our conventions. For 2019, we are expanding the concept and creating year-round partnerships with companies to accomplish three key things: 1) Expand the relationship with our sponsors beyond the three-day convention to create 365 days of mutual benefits; 2) provide real, tangible benefits for our members in the way of MMOPA-exclusive product/service discounts, benefits and special offers; and 3) continue to provide MMOPA a stable and solid financial footing so that we can bring more programming, benefits, safety initiatives and events for our members.

The mission of MMOPA, as we've stated before, is Safety, Advocacy and Community. By partnering with aviation companies – many that you already do business with – we will be able to more effectively deliver on this mission and make your membership dollars even more effective. If you get the chance, please thank representatives of our Partner companies for their support of MMOPA and its mission. 

## WELCOME NEW MMOPA MEMBERS

Doug Anderson, New Braunfels, TX  
 Rickey Arslanian, Livermore, CA  
 Adam Aycock, Fletcher, NC  
 Coley Bailey, Grenada, MS  
 Jason Baright, Clifton Park, NY  
 Morgan Barrett, Russellville, AR  
 Steve Bartels, Franklin, NE  
 Taylor Bettinson, Burlington, ON  
 Warren Brown, Spicewood, TX  
 Chris Burrows, Glendo, WY  
 Andy Cappuccino, Lockport, NY  
 Williams Cheng, North Potomac, MD  
 Jeff Collins, Portland, TN  
 Chase Cormier, Houston, TX  
 Anthony Dellechiaie, Fair Lawn, NJ  
 Deana Dolby, Lombard, AL  
 Dennis Dovey, Austin, AL  
 Nash Dsylva, Batavia, NY  
 Collin Edwards, Horseshoe Bay, TX  
 Martin Fisher, Cedar Rapids IA  
 Paul Fox, Scottsdale, AZ

Bobby Garcia, McAllen, TX  
 Luke Gerard, Johnson KS  
 Kenny Gowen, Oxford, MS  
 Lawrence Guerin, Holtsville, NY  
 Peter Hamann, Fayetteville, NC  
 Carl Hewitt, San Jose, CA  
 Robby Hill, Florence, SC  
 Pierre Hodgins, Grand River, OH  
 Patrick Jebaily, Florence, SC  
 Kent Jessee, Boulder, AL  
 Jeffery Karpel, St. Louis, MO  
 Jeff Kish, Milton, GA  
 Preston Knight, Corinth, MS  
 Michael Larson, Bellevue, NE  
 Howard Malloy, Bismarck, ND  
 Alfonso Marasco, Naperville, IL  
 John Marshall, Camden, ME  
 Fernando Martin, Nogales, AZ  
 Seth Mason, Jasper, TX  
 Jack McClelland, Edinburg, TX  
 Philip Morris, Lakewood Ranch, FL

Gary Nylund, Castle Rock, CO  
 Lance O'Donnell, Kenilworth, IL  
 Fernando Paez, Pharr, TX  
 Steven Pearce, Albuquerque, NM  
 Darin Pflingsten, Fargo, ND  
 Ken Reily, Minneapolis, MN  
 Gary Roberts, Gallatin Gateway, MT  
 Mark Russo, Stevensville, MT  
 Henry Rymer, Mary Esther, FL  
 Joe Sanders, West Point, VA  
 Aidas Sapnagis, Kaunas, Lithuania  
 Doug Small, Nashville, TN  
 Daniel Spurlock, Harrogate, TN  
 Robert Stack, Jasper, GA  
 Werner Strasser, Marloffstein, BY  
 Jeff Tilden, Columbus, IN  
 David Eric Tuggle, Albuquerque, NM  
 Ron Wagner, Brentwood, CA

\* As of April. 17, 2019



# Three Things to Remember

*As long as you're dancing, you can break the rules.*

*Sometimes breaking the rules is just extending the rules.*

*Sometimes there are no rules.*

– Mary Oliver

**A Thousand Mornings: Poems**

**C**alling All MMOPA Members to learn the “rules” for flying our beautiful PA46 aircraft along with your board of directors for its first spring convention to be held at beautiful Amelia Island Ritz Carlton May 29 – June 2. Dianne White in coordination with convention planners Bill Alberts, Sr and Jr. have lined up outstanding academic sessions beginning with Erik Eliel’s Radar Course Wednesday (a day earlier than the convention academic sessions). On the first day of the convention proper, Russ Bartlett who is the former commander of the U.S. Navy Blue Angels will speak as the Fred Hyman Memorial Lecture. Other featured speakers include:

- Scott Dennstaedt, What the FAA does NOT want you to know about weather;
- Bill J. Panarello, human factors;
- Dr. Quay Snyder, personal checklist for optimum performance & fatigue mitigation;
- Gary D. Reeves, single-pilot IFR mastery and ForeFlight pro tips;
- AOPA Town Hall session;
- Luke Alcorn, Working the ATC system.


Many of you are taking up the option of the one-hour upset training with Patty Wagstaff Aviation Safety. Talk about dancing through the sky!

WOW! What a lineup. If you have not registered, please do so today.

AND...if you have not heard, this Ritz-Carlton location has a golf course right out the front door. This will be the second year for our annual golf tournament and this year the MMOPA Safety and Education Foundation will be a beneficiary. One of the newest MMOPA Board members, Ryan Oltman, who along with his wife Kathy did an outstanding job of handling the Broadmoor golf tournament, are organizing this year’s tournament. Of course, if you do an outstanding job for a nonprofit organization, you get swept into a recurrent obligation.

**Master Aviator Presentations** – Joe Casey and the MMOPA safety committee will be presenting the first Master Aviator wings. I know from talking with Joe his excitement can barely be contained, truly a proud parent of the new safety initiative. I have lobbied for the Broken Wing award, but Joe tells me my gallbladder surgery does not qualify. Please speak to Joe about your thoughts on this new program and if you are one of the new recipients of the Master Aviator award, congratulations!

Speaking of the MMOPA Safety and Education Foundation, please consider donating an M600 (just a hint to Simon Caldecott) or some lesser valued item for our auction, which benefits every member. In the past folks have offered their vacation homes, wine, flight training, flight equipment, charter fishing, golf passes (okay maybe not that either, but does not hurt to ask). Seriously, the auction is the primary fundraiser for our 501(c)(3) entity which helps to pay for so many of the safety presentations and reimbursement to members for supplemental training.

I have heard from a few members about a desire to attend but inability to do so because the convention is held so far east. Your Board understands the concerns and the four years will see MMOPA move from the east to the west to country musicland in Nashville. If it were up to me, I would head to the Broadmoor every year, but fortunately for MMOPA it is not up to me. Regardless, Amelia Island is a special venue and I hope to see as many members and guests that can find the time to attend. 





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Nancy & David Auth



Long B. Nguyen Photo

# Meet M500 Owner-Pilot Nancy Auth

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**YEARS FLYING:**  
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CFI/II/MEI,  
Commercial,  
ATP & SES

**TOTAL TIME:**  
6,300

**HOME BASE:**  
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**M** *MOPA Magazine:* Tell us about your aviation background. When you started flying and why is it something you decided to pursue?

**Nancy:** I'm pretty sure I was curious about flying since I was a very little girl (according to my baby book, my favorite book was "Henry the Helicopter," and one of my first words was "airplane," even though I didn't come from a flying family). My husband, David, and I met in 1994; although we shared an interest in aviation, we didn't begin flying until 1999 when we'd exited careers that didn't allow for the dedication to training and currency we knew we'd desire.

I was smitten and continued through instrument, multi-engine, commercial, and ATP ratings along with CFI/II/MEI (and a SES for fun!). I flew a bit of cargo (Metroliner), charters (my first type rating, CE500) and a really fun part-time job flying the Caravan throughout the San Juan Islands for a small airline in the Pacific Northwest. Those jobs gave me a great appreciation for safety and SOPs while at the same time challenging my flying skills and taking them to a higher level. I currently have a little over 6,300 hours total time, including a little over 200 hours in the M500 since we bought it in April 2016.

*MMOPA Magazine:* Tell us a little about where you grew up and where you live now.

**Nancy:** I grew up in the Milwaukee area (in the back yard of the original EAA location –one of my favorite childhood photos features me almost hugging a helicopter at the old airshow location at Timmerman Field KMWC); met my husband who lived in

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At 3-1/2-year-old, Nancy was already in love with aviation.

Seattle while I was living in MPLS; and now split my time between Seattle (based at BFI) and Hobe Sound, Florida (based at SUA).

**MMOPA Magazine:** What aircraft have you owned?

**Nancy:** David and I bought our new Cessna 182 in 1999 the week after we both passed our private pilot check rides; we flew that for four years all over the United States; traded that for a new Piper Seneca V in 2003, owned that until we traded it for the M500 in 2016 (also flew a King Air C90B for one year, and bought our new Citation CJ2, which we still own).

**MMOPA Magazine:** What led you to move up to the M500?

**Nancy:** Speed, the desire for updated avionics and pressurization! Primarily, we appreciated an aircraft that more comfortably makes the twice-annual repositioning flight between our winter and summer home bases of Seattle and Hobe Sound. We love the reliability of turbine engines, and specifically the PT6. The Garmin avionics panel and integrated systems were a big selling point, as well.

**MMOPA Magazine:** Did you consider any other aircraft besides the M500? What were the compelling characteristics that won you over?

**Nancy:** We initially looked at the 2016 Seneca, thinking that we only wanted to update our avionics. Then we looked at all the benefits of the M500 and realized it would be an option that would not only update our avionics but add comfort and speed. And did I mention we love the reliability of the PT6 engine?

**MMOPA Magazine:** What do you enjoy most about how the M500 flies?

**Nancy:** The M500 is predictable on the controls, handles well at both low and high speeds, and is actually very easy to fly. I love the added safety features (ESP and the “blue button”) as well as the very jet-like capabilities of the pressurization systems and avionics. We have the five-blade composite Hartzell prop, which means being careful not to be too aggressive with power reductions on landing. But it’s great for a bit of extra climb performance and looks beautiful! I’ve really enjoyed making the solo flight between our Pacific Northwest and Florida homes.

**MMOPA Magazine:** What’s your training/operating philosophy for ensuring you operate the aircraft in the safest manner possible?

**Nancy:** So many of the systems in the M500 are simple...until they’re not, should an emergency occur. Our purchase included training at Legacy Flight Training, and I’ll be returning next month for my recurrency training. I’m a strong believer in the utility of training that combines the sim, so I can practice those emergencies that we never hope to see, as well as actual time in the aircraft to maintain currency with maneuvers and approaches that we don’t get to experience in our routine flying operations. I continue to train each year with Legacy.

**MMOPA Magazine:** What is your typical mission?

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**Nancy:** Summer months our very typical mission is the flight between BFI and FHR on San Juan Island, where we also have a home. I don't have a real "typical" mission here in Florida, but the best use for our M500 is shorter flights that don't make as much sense in the Citation CJ2.

**MMOPA Magazine:** Now that you've been flying it, what do you like most about the aircraft? What does it do really well and what do you wish it would do better?

**Nancy:** What I like: the plane is just really fun to fly; all of the systems are straightforward, cockpit well designed and functional; great climb performance; perfect for the shorter runways such as the field we operate into at FHR.

What it could do better: better handle turbulence, even small amounts. I often have to pull the power back to keep from getting beaten up if it's even a mildly choppy day. The higher V<sub>MO</sub> of the M600 would also be nice.

**MMOPA Magazine:** Who typically flies with you?


**Nancy:** Mostly my husband, David, who also flew the plane until about a year ago when he decided to stop flying because he no longer wanted to dedicate the time to those same currency and training standards he values. I'm single-pilot rated in the Citation CJ2, so I've continued to fly it even after my husband decided to retire his own wings.

I love to take friends and family flying whenever the opportunity arises. My mom was my biggest fan until she passed away a few years ago.

**MMOPA Magazine:** Why is it important to be a part of an owners' group like MMOPA?

**Nancy:** Owners' groups provide value in so many ways: a community of fellow pilots flying the same aircraft family can share so much helpful information, experience and insights. The website is like a giant virtual hangar where we can check in on our own time and stay current on any matters related to our aircraft.

The meetings back all that up by putting faces to names, adding to a sense of community and enhancing the ownership experience. The MMOPA Master Aviator program is a great idea, which I don't normally qualify for because between my two aircraft I haven't yet managed to achieve 100 M500 hours annually, but this may change since I'm the only pilot in our household now flying the M500!

I'm also a huge supporter of the "Operating Practices," which function as a sort of "Ops Specs" for those of us not technically held to operating at Part 135 standards.  **MMOPA**



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# Facts About Flaps

## Myths, truths and what you should know about this lift-producing device

by Joe Casey

find lots of confusion in the PA46 world concerning flaps. When should they be deployed? When should they not be deployed? Are there rules that must be followed concerning the flaps?

It's a broad discussion, and there is rarely a one-size-fits-all answer to the use of flaps. There are lots of variables in the decision-making process, and good judgment is expected and assumed by the pilot. Runway length, crosswind component, type of PA46, airframe icing, pilot experience and knowledge, ceiling and visibility, and whole host of other important factors play into the final decision of when to use flaps.

All of these considerations played into the decision-making process by the MMOPA Safety Committee that created the Operational Practices (OPs) published on the MMOPA website. The OPs have proven successful for operating the PA46, and included in the practices are some flap deployment guidelines. But, every PA46 pilot has the responsibility of understanding the implications of deploying flaps, and using them (or not) when it best suits the situation at hand. Knowledge is key.

Hopefully this discussion will lay some groundwork about flaps, and supplement the training you receive

from your instructor in initial and refresher training. Concerning flaps on a PA46, here's some info that needs to be understood:

**Deploying flaps add lift and drag.** Duh. This one is easy. But, it does need to be said for this statement is elementary and important. Lesser amounts of flap deployment usually add lift and little drag, and large deployment of flaps increase drag significantly. But adding flaps adds both lift and drag, which can both be helpful (or hurtful) in certain situations.

**Deploying flaps increases the approach angle (assuming all other variables remain constant).** I train engine-out landings with all of my clients, and the flaps can be your friend (or enemy) in an engine-out scenario. If you are high on approach, add flaps; if you are low, don't add flaps.

**Adding flaps creates a nose-down moment, and a subsequent need for greater negative lift from the tail.** Adding flaps moves the center of pressure on the wing aft and consequently pitches the nose forward, so the tail must then produce more negative lift. The most important regime of flight where this situation is consequential is

landing with ice on the airframe. If the airplane is loaded with ice, then making a change in configuration (adding flaps) can create a stall with disastrous results.

**The electric flap motor on most PA46's can "stop in place" if overloaded.** There are four conditions, all which can act upon the motor cumulatively, that can cause resistance in the deployment of flaps and cause the electric motor to be overloaded:

- 1. Flaps being deployed at too high a speed:**  $V_{fe}$  in a PA46 must be respected. All of the OPs adhere to a mantra that I teach for the PA46, "lead with the gear." The landing gear on the PA46 is robust and strong, and should always be deployed before the flaps to slow down so the flap speeds ( $V_{fe}$ ) is respected.
- 2. Flap tracks that are dirty or misaligned:** This happens frequently. Make sure your maintenance provider checks for properly aligned flap tracks at annual. Also, flaps should have a light coating of lubricant, but this lubricant can also attract dirt. Cleaning the flap tracks on occasion is wise, just be sure to have them re-lubricated by a maintenance pro.
- 3. Icing on the flaps or flap tracks:** Deploying flaps puts the flaps and flap tracks into the slipstream, which can bog down the movement of flaps, especially flaps that are to be retracted.
- 4. Flap transmission that is worn:** The 90-degree transmission that is just below the flap motor can wear on the inside and bind. Especially on older airframes, this flap transmission can require replacement.

Anything within the flap system that could bog down the flap motor can cause the flap motor to "stop in place." You will get a FLAPS caution advisory light, and the only way you gain control of the flaps is to reset the flap electronic circuitry. Since shutting off the electrical system for the airplane is not practical in flight, the best way to reset the circuitry is to pull out and reset the FLAP WARN circuit breaker. Once accomplished, the flaps will again respond. The FLAP WARN circuit breaker is one of the CBs that should be collared so it can be found easily in flight.

**Manual retraction.** If the flaps are "stuck in place" and resetting the FLAP WARN CB won't bring the flaps back to operation, the guilty party is oftentimes a flap position switch, which is under the floorboard between the middle seats. Obviously, maintenance action by a qualified maintenance provider is required to repair the problem. But what if the flaps won't retract and you happen to be at an airport where maintenance is unavailable or unfeasible? A neat option is to remove the left middle seat cushion, remove the plate that is velcroed in place, and gain access to the flap motor. There's a small black rubber cylinder on the flap motor that will allow you to turn the motor. It'll

take thousands of spins of the flap motor, the process will take 15-30 minutes, and you'll have a nice set of blisters on your fingertips, but the flaps can be manually returned to the UP position. Once back in the UP position you can fly to the maintenance provider of your choice. This little trick has saved my bacon more than once while at an outstation.

**The increments of deployment are important.** The first notch of flaps is 10 degrees, the second is another 10 degrees, and the third is 16 more degrees. So moving from "flaps up" to "first notch" is a lesser move than moving from "two notches of flaps" to "three notches of flaps." Be intentional when you deploy to full flaps, as the third notch of flaps adds more, with a greater effect of lift and drag.

**Flaps at 20 degrees or greater cause the GEAR WARN light if the gear is not down and locked.** I like using 20 degrees of flaps or greater on a "normal approach" because of the potential of activating the GEAR WARN light and audio. The OPs were created to use 20 degrees of flaps (or greater) for landing to ensure this safety feature is triggered.

**Visibility on landing is important.** The landing attitude with no flaps is a higher pitch angle than with flaps deployed, creating less visibility on landing. It is acceptable to land with any flap setting, but each flap setting creates

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a slightly different perspective. All pilots should practice landing with different flap settings in initial/recurrent training to ensure comfort with landing with each flap setting.

**Too many pilots are scared of full flaps.** I'm not sure where it came from, but there seems to be a minority of PA46 pilots that were taught that 36 degrees of flaps creates a "dangerous" or "undesirable" flight characteristic. This is simply not so. It is just as easy to fly a PA46 at 36 degrees of flaps as with flaps up. To me, a "normal landing configuration" is 36 degrees of flaps, and I then choose a reduced flap settings on some landings for outside factors such as icing, strong crosswinds, or not seeing the runway until 200 feet AGL on an instrument approach.

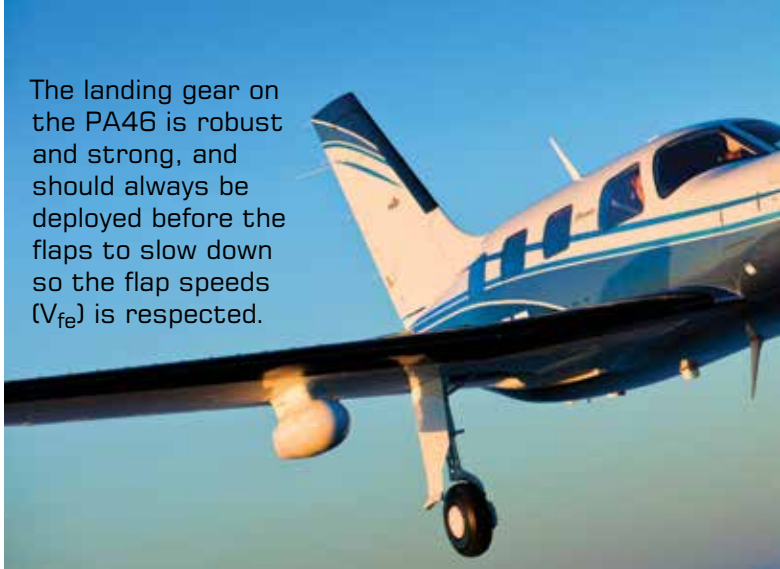
**The flaps in the M600 is completely different than all other PA46s, and requires a different OP.** The wing on the M600 is completely different than all other PA46s, so don't confuse the two operationally. When moving from a piston PA46 to a Meridian/M500/JetPROP, the use of flaps is nearly identical. But when moving from a PA46 to an M600, there is a difference. The M600 has a completely different wing with completely different flaps, and the operation of those flaps are different. Expect a small (but very surmountable) learning curve when moving up to an M600 from any other PA46.

**A "stabilized approach" is the goal, and no changes to the configuration should be made at less than 500 feet AGL.** I see this guideline violated all the time. Recently, I had a pilot fly down the glide slope at 10 degrees of flaps, add 20 degrees at 200 feet AGL, and then add 36 degrees at 100 feet AGL. It was a disaster of an approach. The best approaches are made with no configuration changes below 500 feet AGL. While not a "hard rule," for the pilot always has the prerogative to do whatever is needed to create a safe flight (especially in an emergency), a stabilized approach is always the goal, and not changing the configuration creates stability on an approach.

**Don't add flaps to slow down in turbulence.** As John Mariani teaches so well in M-Class, "Your enemy in turbulence is lift." So if you anticipate a rough ride, do slow down to  $V_a$  (or below), but don't add flaps to do so. Do reduce power and do use the gear to slow down in turbulence. While flaps will add drag, which will slow you down, flaps also add lift. Never ever add flaps in a PA46 to slow down in turbulence.

**Flaps require pitch trim use.** Actually, the amount of pitch trim movement required in a PA46 is FAR less than some other airplanes (the King Air B100 is probably the worst), but there is still a need to re-trim when flap changes are made. This re-trimming changes the stability of the approach. I see some pilots turn off the autopilot and immediately add flaps (for example, on approach to

The landing gear on the PA46 is robust and strong, and should always be deployed before the flaps to slow down so the flap speeds ( $V_{fe}$ ) is respected.



landing). A better way is to add flaps on an approach is to add the flaps while the autopilot is ON and allow the pitch trim to null out the load change. When the autopilot is then turned OFF, the pitch trim will be set perfectly.

**PA46 flaps are "effective, but weak".** The flaps are a huge percentage of the length of the wing, and as such they are quite effective. They do a great job. But, they also have a fairly weak mechanical setup. The weakest link is a bracket under the wing, visible in the wheel well. This bracket can bend or break under load on very rare occasion creating a "split flap" condition. The bottom line is to respect  $V_{fe}$ . In my observation during training,  $V_{fe}$  36 is violated more than any other flap setting, so make sure you get below  $V_{fe}$  36 before adding that last notch of flaps.

**Takeoff flaps?** It is totally acceptable to takeoff with 0, 10, or 20 degrees of flaps in any of the non-M600 PA46s. In the Gar-Kenyon Malibu, my "normal" is to depart with no flaps so I don't have to wonder about whether or not the hydraulic pump is operating to bring the landing gear up. In all PA46s, I use 20 degrees of flaps for a short-field takeoff, and the airplane will definitely takeoff in a shorter distance with 20 degrees of flaps. Most of the PA46 pilots use 10 degrees of flaps for takeoff because less elevator stick force is required to takeoff and it just seems more comfortable for most pilots. If a big crosswind exists, a lesser flap setting is probably desired. The POH lists takeoff performance charts for 0 degrees flaps and 20 degrees of flaps, but not 10 degrees. If you choose to use 10 degrees of flaps, interpolation of the performance charts will be required. The bottom line...any flap setting of 20 degrees or below is acceptable for takeoff, but choose your flap setting by understanding the aerodynamic implications present for that particular departure. And, practice takeoffs with different flap settings with your instructor during initial and recurrent training.

Concerning icing and flaps, there's some additional info that needs to be understood:

**The older airplanes have much poorer verbiage concerning icing in the POH.** In the 1980's there was a




Photo courtesy Paul Bowen Photography

lesser discussion in the aviation world about icing than there is today. We've learned much about icing in the last 30 years, and the verbiage in the more modern airplanes is far more robust. To bolster the discussion in the earlier model PA46s, "Section 9. Supplements" has been added to the POH, and this provides a broader

discussion of icing for a particular airframe. Make sure you read your POH all the way through and pay particular attention to Section 9 when considering icing.

**The newer airplanes have MUCH better icing verbiage in the POH.** The M600 has excellent guidance concerning flight with airframe icing, and the Matrix has better guidance than the Malibu. If you operate an earlier PA46, make sure to become a student of icing and apply modern practices. The M600 POH provides clarity and leaves no room for doubt about how to handle icing on approach. All of the other PA46's have varying excellence in terminology, usually commensurate with date of certification approval. Also, the MU2 community took a proactive stance to ensure their community understands the implications of icing, and icing affects all airframes. Be sure to widen your net beyond the PA46 community to catch nuggets of wisdom from lessons learned in other owner-flown communities.

**Icing and flaps don't mix well.** Every icing situation is different, and there's no way to know for sure how the airframe icing will impact an approach. Appreciable experience (or lack thereof) by the pilot who sits in the cockpit and looks out on the wings for icing on approach is usually the difference between a safe landing and disaster. It's a subjective analysis at best, and one in which you don't want to guess wrong. If an approach must be made with ice on the airframe, and I don't suggest any rookie roll those dice, increase the speed and plan to use less flaps. I hope this discussion of flaps helps you fly your PA46 with increased knowledge and wisdom. As in just about every piloting situation, the pilot with the most knowledge usually makes the best decisions. 

Joe Casey is an ATP, DPE, CFI (A/H), MEI, CFGI, CFIH, as well as a U.S. Army UH-60 standardization instructor/examiner. A MMOPA Board member and chair of the Safety Committee, he has been a PA46 instructor for 14-plus years, and has accumulated 11,800-plus hours of flight time, 5,000 of which has been in the PA46. Contact Joe at: [joe@flycasey.com](mailto:joe@flycasey.com), or by phone at 903.721.9549.

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# Upset Training at Jet Speed

*Training in an L-39 jet provides unique advantages for PA46 pilots.*

by **Bill Janss, MMOPA Member**

I was recently on a quest to satisfy the requirements of the MMOPA Master Aviator program. Although I had undertaken aerobatics training many years ago, about 10 hours in a Decathlon, I thought perhaps upset recovering training might be a good option. I started looking for a suitable training center that would meet the requirements set out by MMOPA.

After a few calls I identified Jet Warbird Training Center in Santa Fe, New Mexico as a good choice. My introductory call

with Larry Salganek, owner and chief pilot, helped enlighten me to the benefits of jet upset recovery training. The aircraft used for the training is the Aero L-39 Albatros, a unique blend of Soviet-style simplicity and Czechoslovakian-style Western technology. It is an amazingly easy aircraft to fly – with excellent back-up systems and is the current Russian trainer.

The L-39 is a good match for the performance characteristics of our aircraft, in particular the turbine models.

## L-39 Performance Specifications:

Weight:	10,500 lbs.
Power loading:	3,800 lbs of thrust
Rate of climb at 10,000 feet:	4,000 ft/min
Cruise speed:	310 to 360 knots
Stall speed:	90 knots
Final approach speed:	120 knots
Best climb:	180 knots
Pressurized and air-conditioned	
Anti-lock, anti-skid brakes	

## How L-39 Upset Training Differs

Previously, there were two paths for training. The first involved the use of a simulator to “simulate” attitudes. The student could maneuver the aircraft to recovery as instructed, but without the reality of “g” forces and debris flying about the cabin. This could be easily performed without anxiety on the part of the trainee.

The second method involved the use of piston aircraft to develop skills. The disadvantage here being the very low comparative airspeeds in addition to a false situational transfer based upon the resulting use of less sky and altitude.

The L-39 is a big step toward the reality of upset training. It is a well-mannered aircraft capable of 8 G's. Although there is no need for that kind of “G,” the strength of the airframe leads to a feeling of confidence when we are subjected to 4-G pulls. The L-39 is perfect for demonstration of descending spirals at airspeeds of 400 knots. Its high wing loading allows excellent stall demonstrations. It is also equipped with factory

switching that allows failure of airspeed indicators, altitude indicators and directional gyros.

The Jet Warbird Training Center takes advantage of all of these systems to instruct students in emergency recovery techniques in visual and simulated instrument flight. When your Meridian/Mirage/JetPROP goes inverted, the nose drops and you wind up in a descent at 200-300 knots at 3,000 feet per minute. In a simulator there is no anxiety and you do not feel the G forces. The trouble with the piston aerobatic trainer is: The airspeed stays below 200 knots, allowing you to have a false sense of security. The “time to impact” is a lot longer in the piston aircraft and the power management in the piston aircraft is much different than our turbine aircraft.

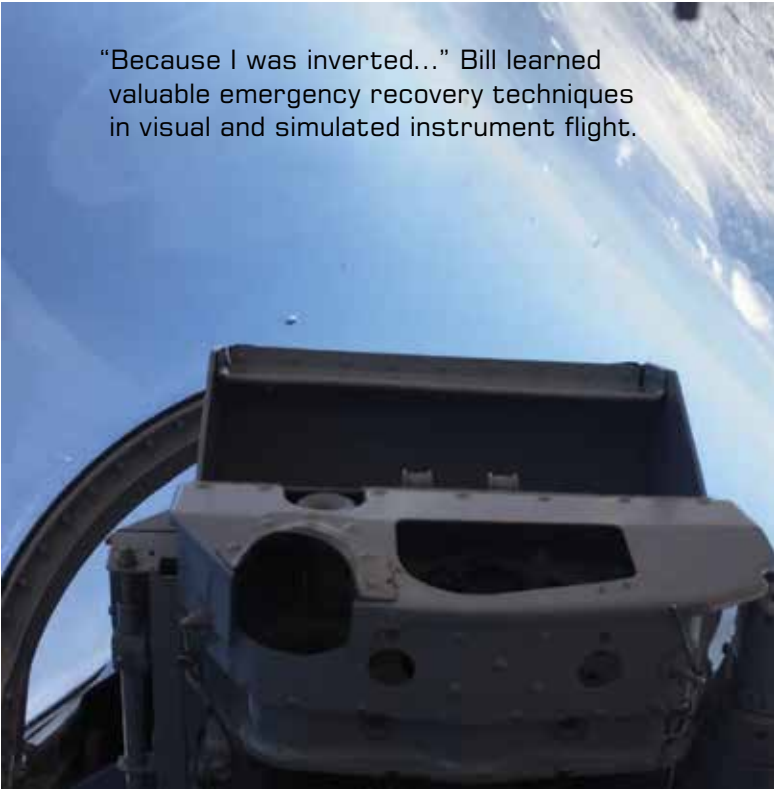
## Course Curriculum

*Flight One Ground School* – Introduction to the L-39. Comprehensive ground school to prepare the pilot for front seat operation of the L-39. About 1.5 hours. Basic techniques including:

- Stall/g speeds
- Recovery techniques from stalls induced to unusual attitudes
- Spin recovery techniques
- G awareness lecture
- G physiology and tolerance techniques
- Preflight brief for first flight:
- Preflight
- Engine start
- Taxi
- Takeoff and climb to practice area
- Clearing turns (35 and 45-degree banks)
- 60- and 74-degree banks & pilot awareness of G loading
- Aileron rolls
- 2-point rolls + recovery from the inverted
- Limited aileron recovery

### *Flight Two Ground School*

- Post flight post flight review/de-brief
- Discussion of limited roll rate and g limits of trainee's aircraft
- Unusual attitude recovery techniques
- Review of stall aerodynamics and recovery procedures



“Because I was inverted...” Bill learned valuable emergency recovery techniques in visual and simulated instrument flight.



The L-39 is a well-mannered aircraft capable of 8 G's and its high wing loading allows excellent stall demonstrations. Here, Bill puts his skills to work.

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*Preflight Brief for Second Flight:*

- Review of very steep turns
- Limited aileron recovery from the inverted
- Nose down attitude recovery from the inverted
- Nose down attitude recovery from the inverted with limited aileron
- Stall series...clean, dirty, accelerated
- Extreme attitude stall recovery techniques
- Descending spiral high g recovery
- "I've got it/you've got it" recoveries
- Post flight de-Brief

Larry Salganek works with your tolerances to make the training a useful and fun experience. He is aware that the course goals will have to be modified slightly for each "student." Some pilots may be able to go further than the suggested curriculum. Some may find it necessary to "ease up" on some maneuvers.

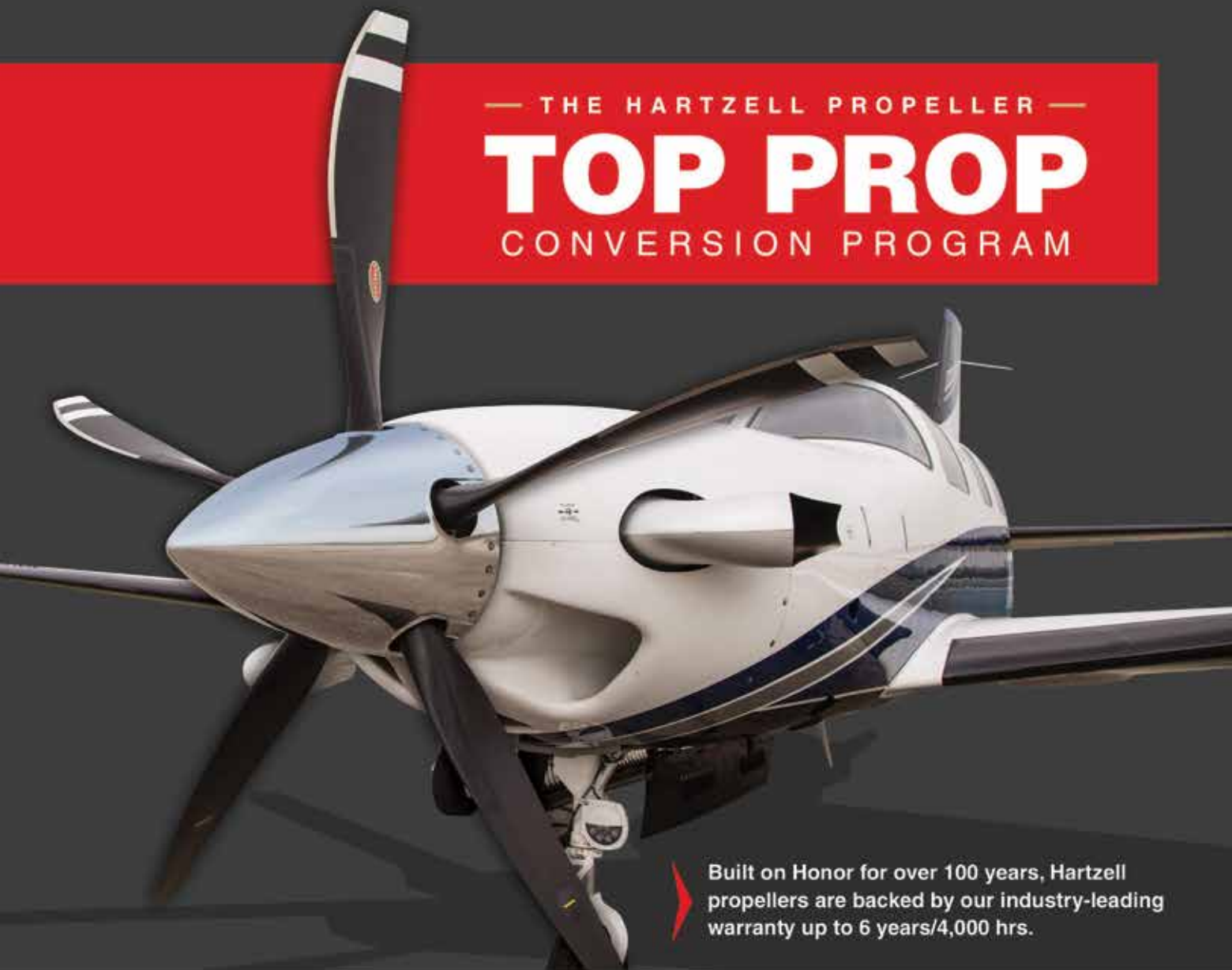
I found the course to be delightful and productive. Larry is a wonderful instructor and had the wisdom gained from many years of training in jets to share with me. An added benefit was the beauty of the Santa Fe area as well as dining and shopping with my wife, Diana, in Santa Fe during the weekend. I highly recommend this course for any of you interested in in upset recovery training. 



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# Lesson Learned, Lesson Shared

## *Low and Slow in IMC*

by Peter Yarrow

**W**e had had a tight business schedule in the Netherlands before flying my JetPROP P46T, the turbine conversion of a Piper Malibu, from Rotterdam to the United Kingdom. At that time, I was a 1,500-hour pilot with a U.S. instrument rating and highly current on the aircraft having flown it from the United States. However, I was a relatively inexperienced IFR pilot and I was aware of my pilot limitations.

Our trip into Europe involved meetings in Zurich and then repositioning to the Netherlands. As I had some reservations about the complexities of new instrument approaches, filing IFR flight plans, slots, refuelling, checking weather, negotiating strange, large airports and paying landing charges. So, I decided to hire a professional pilot/instructor on a commercial basis to act as PIC. I felt that this would create a more relaxed environment for me and my colleague and help me out with the scheduling. The pilot had been trained on the aircraft and was current, with lower hours on type than me. He flew from the left side. I was responsible for radio communication from the right seat.

That should have kept us safe, or so I thought. To be fair, the two pilots were new to each other, and I was used to flying single pilot, so our CRM was less organized than perfect.

The last day in the Netherlands involved an early morning meeting in Groningen, followed by a flight to Schiphol then to Rotterdam. These were short sectors and cumulatively did not recharge the battery, a matter of significance in a turbine aircraft when sufficient volts are required to spin the turbine before ignition. As my original trans-Atlantic ferry pilot and instructor Travis Holland, put it, “Your wallet and your wallet and condition lever are lever are directly connected. A “hot start” is expensive!”

To be clear, Travis was NOT the professional pilot accompanying me to Europe on the trip I am writing about.

At the end of our working day in Rotterdam, as soon as I was seated for the final leg home, we began the turbine start procedure. It was classic Sod’s law: On this hot and still day and with a depleted battery there was not enough airflow to avoid the dreaded “hot start.” The delays mounted up as we had to summon a mobile generator and revisit the FBO to pay the additional bill. We had a vital slot to meet, as our destination airport in the UK closed firmly at 1900, so with the delayed start we were already up against the clock. By the time we were airborne I was hot, stressed and tired, and I knew we could reach our destination after the airfield closure requiring diversion to an alternate.

Finally, we were in the cruise over the North Sea at FL160, with an ETA a minute or two before 1900. Perhaps we relaxed a little, as we were close to home. The weather was bases at 2,000 feet and tops at 14,000 with a solid layer in between, enabling an easy VFR arrival once below the base. After our clearance to descend below the TMA base of 2,500 feet, we throttled back the engine to idle to descend. The PIC set the autopilot to stop the descent at 2,400 feet still in IMC, and to level the aircraft off at that level. As we descended, the engine instruments gave plenty of highly relevant power information, but of course there were no external visual references. The descent created so much wind noise that there was no aural clue that the engine was engine was powered back.

With the power set to full idle, levelling off at 2,400 feet the only option for the aircraft as configured was for it to decelerate as the autopilot maintained the programmed 2,400 level. The P46T has no auto-throttle. The deceleration was so gentle that we did not physically sense it. Both pilots completely missed the fact that the aircraft was decelerating. The PIC had forgotten to add power as we levelled off and, in idle the engine, of course, was delivering no power. The speed decayed and the accident was fully primed.

Though this happened 10 years ago, I remember clearly what occurred next as if it had taken place today. From


the right-hand seat and still in IMC, a movement on my right-side panel caught my eye and, to my horror, I saw the steam-driven ASI unwinding quite rapidly.

As calmly as possible I quickly advised the PIC to disconnect the autopilot and to increase power. Strangely, under stress, I did not say “NOSE DOWN.” Fortunately, for the three of us, the extraordinary power of the PT6 kicked in very quickly and the airspeed recovered. In fact, we went into a climb and quickly busted back into the TMA, which led to me apologising to Radar saying we had an “aircraft issue.” We then descended below the cloud base and carried out a safe VFR approach and landing. On the ground I found myself shaking like a leaf, and I was utterly speechless. When I had recovered my voice, my words with the PIC were certainly curt. I believe we had recovered at a mere five knots above a flapless stall. We had come perilously close to a stall at a low-level in IMC, the consequences of which would probably have been a spin and crash from such a low level. An IMC accident of this kind took place in Austria, in a P46T, killing all the occupants. In our case, the visual clue from a reliable, old-fashioned ASI, as opposed to a glass ticker, may just have saved our lives.

## Lessons Learned

There were quite a few lessons from this incident:

1. The most experienced pilot on the aircraft and systems should be PIC in the left seat.
2. Be acutely aware of the demands and risks of flying in IMC and lack of outside visual reference, stay alert in IMC and keep scanning the panel, even if the autopilot is engaged.
3. Never over-rely on the autopilot and be fully aware of its limitations.
4. Use some power in the descent, so that the aircraft will continue to fly safely if levelled off.
5. No matter how experienced the pilot in the left-hand seat is, the second pilot has to monitor the instruments and configuration and must intervene if required. Had I not stepped in, I would be in my coffin.
6. Remember the need to AVIATE before anything else.

Needless to say, I have had recurring nightmares ever since. Thank goodness I had not dropped off after the pressures of a working day! I am not proud of the part I played in the incident and learned a great deal. I wrote this piece so that others may learn from my mistakes. Fly safe! 



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## The Life of an Adventure Flyer:

If you follow general aviation, you're likely familiar with ICON Aircraft. The Vacaville, California-based airplane manufacturer known for the amphibious light sport ICON A5 announced that the company's first production model A5 (ASN-01) crossed its 1,000th hour of flight time earlier this year. Back in January, the company also reported that its 100th airframe shell (ASN-100) was completed at the company's composite manufacturing facility in Tijuana, Mexico and was headed to Vacaville for final assembly. With more than 35 ICON service partners in place, the company is also making significant progress in developing a nationwide network of service centers and flight instructors to provide support and training to new and existing owners throughout the United States

# What It's Like to Own a Piper M350 and an ICON A5



Jack taking delivery of his new Founders Edition A5 from Regional Sales Director Scott Rodenbeck. Scott will be in attendance at the MMOPA convention.



The ICON A5 is the only aircraft certified by the FAA to have a spin-resistant airframe. In addition, the sport plane features an angle of attack (AoA) gauge and a full airplane parachute, the ICON Parachute System (IPS). As announced on page 10 of this issue of *MMOPA Magazine*, ICON has come on board as a Partner/Sponsor and supporter of MMOPA. Through its involvement with MMOPA, ICON looks forward to showcasing new adventures that the versatile aircraft unlocks and is planning opportunities to bring the two communities together.

One of ICON's newest owners is MMOPA Member Jack McCartt, who also happens to own an M350. We caught up with Jack to understand why he chose to own these two very different aircraft.

### ***Where did your journey begin as a pilot?***

**McCartt:** I grew up on a Tennessee Valley Authority lake in northeastern Tennessee and have lived on or near water almost all my life. In fact, my two favorite activities are flying and boating. These two activities are very closely related, at least in my mind, and share the same sense of adventure that I thrive on. In the early 1980's, I moved to Florida because of the water activities and my love for the ocean.

When ICON Aircraft announced the A5, I started following their development and knew that I would one day be an owner and pilot in the new airplane. The A5 just seemed to be the perfect airplane to enjoy my idea of sport flying. And of course, there was the first ride/demo of the aircraft in Tampa Bay, right up to Bayshore Boulevard.



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***Where do you fly? What adventures do you have planned in your A5?***

**McCartt:** My home is in Florida, which really is a perfect place to own a seaplane! There are amazing lakes, bays and rivers that are remote and only accessible with a boat or seaplane. My flying in the A5 to this point has been in Florida but I am planning to fly and land on all of the TVA lakes in Tennessee, Kentucky and Virginia this summer. Additionally, I am planning a trip out west to Utah this summer and fully intend to take my A5 with me.

***How does owning an A5 compliment your experience as a M350 owner?***

**McCartt:** I own a 2018 Piper M350 that I use for business travel. It's an incredibly capable all-weather aircraft that is fun and comfortable to fly, in addition to being amazingly efficient. The views from the flight



levels are beautiful and remind me of all the places below that I want to explore. As I was flying over Georgia, South Carolina and Tennessee at FL220, I found myself looking at the lakes below, and thinking, “what a great place to go exploring.” I am now planning the same trip at a much lower altitude in the A5 for an exploring adventure.

***What safety features initially appealed to you in the A5? Having flown it now as an owner, how have those features made flying more enjoyable?***

**McCartt:** The key safety features that come to mind are the aircraft’s ballistic parachute and the spin resistant design. But the most important feature to me is the handling qualities of the aircraft in the air and on the water. After my initial training, I can pretty much put the airplane anywhere I want on the water, in the air, or on the ground. It is such a pleasure to fly and the simplicity of the cockpit allows me to focus outside of the aircraft, making the flying almost effortless.

***What was it like touching down on the water for the first time?***

**McCartt:** I was an early deposit holder for the A5, so I knew that I wanted to get my seaplane rating. I decided to do my training before the aircraft was delivered so that I would be ready to start exploring when the aircraft arrived. My first touchdown on water combined the sensation of flying and boating together. To my amazement, some of the smoothest landings that I have made in my 45 years of flying have been my most recent water landings in the A5. There’s no way that this experience will not bring a smile to your face.

## ICON Expands Its Footprint

ICON has expanded its presence beyond its Vacaville, California headquarters to include flight centers in Tampa, Florida, Santa Monica, California and a newly opened showroom in Miami, Florida. The company has a national presence with over 10 sales reps across every major region of the United States, offering demo flights on a daily basis.

You can experience the A5 and meet the ICON Aircraft team at the 2019 MMOPA Annual Convention & Fly-In this summer at the Ritz-Carlton Amelia Island. If you miss the convention, contact the ICON Demo Team at [fly@iconaircraft.com](mailto:fly@iconaircraft.com) and follow their Facebook and Instagram accounts for updates on when the aircraft will be in your area.

## About ICON Aircraft

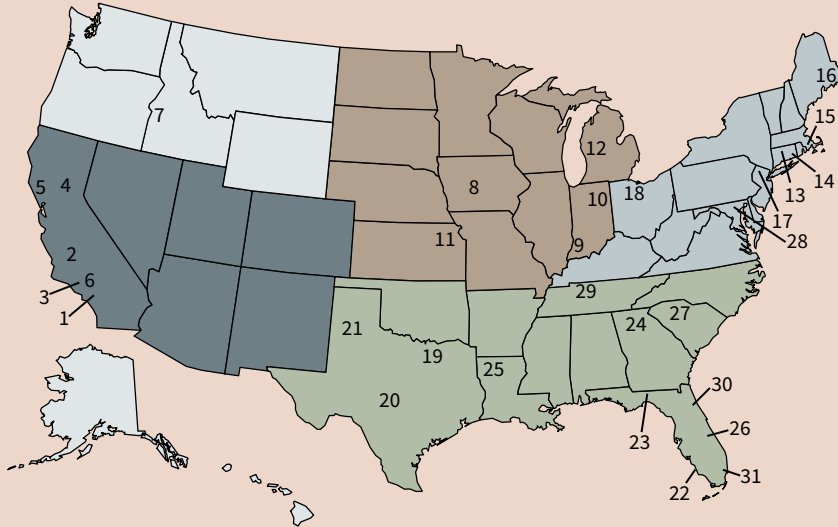
ICON Aircraft’s mission is to accelerate the democratization of personal flight and 3-D mobility. ICON creates consumer-friendly, safe, technologically advanced aircraft that make the adventure of flying more accessible to mainstream consumers.

ICON’s first aircraft is the A5, an amphibious sport plane that fuses outstanding aeronautical engineering with world-class product design and unprecedented safety features. The A5 is the world’s first production aircraft that is spin-resistant, making it arguably one of the safest small aircraft ever created. The A5 has won some of the world’s most prestigious design awards and has inspired a global following.

ICON Aircraft was founded in response to a global aviation regulatory reform movement led by the FAA intended to drive innovation, safety, and accessibility of small aircraft. 



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# Charitable Flying



by Daniel Kukla

MMOPA member Bob Baker and MMOPA Executive Director Dianne White – both Angel Flight volunteer pilots – meet at Cox Field in northern Texas for a patient handoff between Angel Flight regions.

**E**milee Williams woke up from surgery with a feeding tube, unable to move or even whisper. No one knew for sure what happened during the procedure that essentially paralyzed her body, but the unexpected outcome was terrifying.

This was once a healthy and ambitious young woman who was

ready to graduate from college and take on the physical therapy doctorate program at Rockhurst University. Now all she could do was blink.

The immobilization combined with excruciating amounts of pain scared Emilee to the brink of suicide. Since she couldn't even point at pictures, she was forced to learn a tedious blinking system to

communicate with her family and doctors. Her rigid body hurt so much during 12 nightmare weeks in the hospital that she used her eyes to spell, "Please let me die," to her family.

Everyone left the room in tears, but they refused to let Emilee go. They found hope with help from an organization of volunteer pilots



# Volunteer pilots save lives through the power of aviation

A vibrant college student, Emilee was affected by a rare genetic disease that took two years to correctly diagnose. Unable to endure the 11-hour car ride from Springfield, Missouri to one of the only treatment centers in the nation in Michigan, Emilee was grateful that St. Louis-based Wings of Hope could provide transportation to and from treatment.



who played a vital role in Emilee's extraordinary recovery that exceeded even the most optimistic boundaries on her range of possible outcomes projected by medical experts.

## A Deadly Disease

Doctors diagnosed Emilee at age 21 with Wilson's Disease. This rare genetic disorder prevents a body from

Today Emilee (right) is fully recovered and thankful for the critical role Wings of Hope played in her recovery.

eliminating excess copper, which then accumulates in and attacks the liver and brain.

While Wilson's disease is treatable to the point of patients maintaining their normal



Disease diagnosis, triggering the start of those 12 weeks in the hospital that nearly broke her will to live.

Emilee’s body could no longer endure the 11-hour car ride required to travel to one of just six medical centers in the country certified to treat her rare disorder. She couldn’t even sit upright long enough to fly on a commercial airline, and expenses for reoccurring round-trip flights would have been astronomical.

Her situation seemed hopeless.

“I didn’t really have much of a future,” Emilee said.

That’s when her family found a nonprofit charitable flying organization called “Wings of Hope,” the lifeline that connected Emilee to the team of experts who pulled her health out of that deadly tailspin.

## A Life-Saving Solution

Jack Taylor will never forget the “foggy, nasty day” on which he met Emilee in her hometown of Springfield, Missouri. As a volunteer pilot for Wings of Hope, his mission was to transport Emilee more than 700 miles to a Wilson’s Disease Center of Excellence at the University of Michigan.

Low rain clouds made the flight challenging by reducing visibility and available landing sites to a near minimum. For Emilee and her family, the flight was also free of charge.

Jack received his mission through Wings of Hope’s “Medical Relief & Air Transport” (MAT) Program, which leverages donated airplanes and volunteer pilots like himself to fly people to hospitals and treatment centers where they can receive specialized health care that is not available to them locally.

Jack couldn’t help but notice the blinking system Emilee and her older sister, Alaina, used to communicate as they loaded Emilee into the Piper PA-34 Seneca owned by Wings of Hope. The task took quite some

Angel Flight Central helped Haley, who is undergoing cancer treatment at Mayo Clinic, to play in her hockey team’s state championship match. Haley was able to play and then return to Mayo to continue treatment the next day.

lifestyles, the condition can be fatal when not addressed early. It took Emilee roughly two years to receive an accurate diagnosis after experiencing initial symptoms in 2011. She cycled through a revolving door of doctors and treatments aimed mostly at addressing her suddenly severe anxiety and depression, a frustrating and disheartening process that allowed her health to deteriorate as her brain accumulated life-threatening levels of copper.

“I began feeling like a lab rat and like I was crazy,” Emilee said. “I was being poked and prodded, taking all these different tests and getting nowhere. I knew in my gut something was wrong – something bigger than anxiety and depression – but the doctors kept telling me I was okay.”

By the time an MRI requested by Emilee’s desperate mother and concerned professors finally revealed the copper in her brain, it was almost too late. Her health bottomed out less than a month after the Wilson’s

time, but the twin-engine aircraft was specially outfitted by Wings of Hope with a stretcher to accommodate fragile and non-ambulatory patients like her with room for family members like Alaina.

Jack also came prepared to navigate the soggy weather conditions. Like all Wings of Hope volunteer pilots, he is instrument rated with a commercial license. As a veteran Vietnam helicopter pilot with more than 55 years of flying experience, he has logged well over the required minimum of 1,000 hours in small aircraft.

Wings of Hope flew Emilee on six total round trips to the Wilson's Disease Clinic and back from 2014-16. These flights empowered her with access to the doctors and resources representing her best chance at recovery. Due to the rarity and severity of her disease, Emilee did not have any other viable options for effective treatment. Also due to her disease, the one place she needed to go seemed all but impossible for her to reach before discovering this service.

To put it much more bluntly, Emilee said that without Wings of Hope, "I would not have survived."

## **An Engine of Volunteers**

Wings of Hope flies approximately 200 MAT missions each year, covering 26 states within a 600-mile radius from its headquarters in St. Louis, Missouri. The organization was a St. Louis Spirit Award finalist for advancing the city's rich history and global reputation as a hub of innovation; although it did not win in that category of the St. Louis Regional Chamber's "Arcus Awards," Wings of Hope did win the People's Choice Awards by popular vote.

"It's an organization that's on a good trajectory," Wings of Hope Board Member and MMOPA Member Don Kukla said.

All of this is supported by approximately 300 highly skilled and engaged volunteers. The group includes 20 MAT pilots, 80 mechanics and all the accountants, flight coordinators and administrative support staff – even each member of the volunteer recruitment and retention team itself. These volunteers often come

to Wings of Hope with professional experience in their respective role. Some are retired. Some are in the prime of their career. All are deeply passionate about the humanitarian impact they make by volunteering their time and skill.

"Every activity we do is directly touched by the hand of a volunteer," Wings of Hope President and

Angel Flight Central helped Haley get her team's state championship, a logistical impossibility otherwise.



CEO Bret Heinrich said. “Our volunteers are the engine that runs this organization.”

A majority of MAT passengers are children with congenital disorders and rare or life-threatening health conditions. The need for orthopedic specialists is especially common because of a condition doctors call “clubfoot” seen in approximately one out of every 1,000 babies.

**“It brings tears to your eyes,” Jack said. “You feel like what you’re doing is worth the effort. It’s pretty rewarding.”**

Once Wings of Hope begins transporting a patient, the organization commits to flying them to post-op care and treatment for as long as it is needed. The MAT Program relieves these individuals and their families of the stresses and financial burdens of arranging and paying for travel.

“Clubfoot and many of the conditions we provide services for are on-going,” Bret said. “Their treatment requires many flights. We are able to do that at no cost to their family.”

Wings of Hope places no income restrictions on who the MAT program serves because, as Bret puts it, “The service we provide would be a financial hardship on just about anyone.”

There are also no age restrictions for MAT passengers. The only

criteria for someone requesting a MAT flight are their location and medical clearance to fly after a final screening by the organization’s Chief Medical Officer.

Wings of Hope is a global humanitarian charity with a scope that is much broader than the MAT program. The nonprofit uses the power of aviation to help the world’s poorest citizens access the basic resources essential for human dignity: health, education, economic opportunity and food security.

The world of charitable flying is also much broader than just this one organization.

### **An Angel on Ice**

Stage II Hodgkin’s Lymphoma Cancer didn’t kill 13-year-old Haley Jundt’s desire to play in her state championship hockey tournament. Four 21-day cycles of chemotherapy to treat her condition didn’t quell her hockey fever, either.

The only thing stopping Haley from joining her team was a 12-hour drive from the Mayo Clinic in Rochester, Minnesota to the tournament site in Watford City – a logistical roadblock because of Haley’s scheduled chemo treatment on the day before the puck dropped.

So Haley’s social worker put in a request to Angel Flight Central (AFC), a volunteer nonprofit organization whose mission it is to, “Serve people in need by arranging charitable flights for health care or other humanitarian purposes.”

An AFC pilot volunteered to fill the flight request within 24 hours and also arranged transportation for Haley from the airport to the rink. He was only a little surprised to hear that Haley’s large bag of hockey gear was making the trip, too.

“Oh, she’s playing?” Haley’s mom, Leann Jundt, recalled the pilot saying when he heard about the cargo.

Haley’s team was even more surprised when she walked into the locker room.

“They were all like, ‘What the heck, how did you get here?’” Haley said. “It felt pretty good to go play with them instead of sit in a hospital room. It was a once-in-a-lifetime experience. It was amazing.”

Haley’s team finished fifth in the tournament, but she still celebrated a much more significant victory. Haley rang the bell signifying she beat cancer on March 6 and held a cancer-free party on April 6.

### **A Grand Slam**

The service provided by AFC compares closely the Wings of Hope MAT program. One fundamental difference, however, is who owns the airplanes used for the flights.

While Wings of Hope owns and provides airplanes for its volunteer pilots to fly, AFC pilots use their own aircraft. Each approach comes with its own advantages and challenges.

Because it owns the aircraft, Wings of Hope can specially outfit them to accommodate a wider spectrum of patients – people like Emilee who need to lay flat on a stretcher rather than sitting upright. The tradeoff is a narrower set of potential volunteer pilots. Flying a Wings of Hope plane requires a commercial pilot’s license and multi-engine rating in addition to instrument rating and 1,000 hours of logged flight time; volunteer pilots commit to fly at least two trips per month and attend one monthly Flight Operations Team meeting.

Conversely, AFC accommodates a larger pool of potential volunteer pilots with more constraints on who is physically able to fly as a patient. In addition to instrument rating, AFC volunteer pilots must have at least 250 hours of Pilot-in-Command (PIC) Time with 500 hours of total time. A commercial pilot’s license reduces





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the Total Time requirement to only the 250 PIC hours, but it is not required, nor is multiengine rating for anyone flying a single-engine aircraft.

“If you love to fly, this is a great opportunity to embrace that passion in a way that also makes a very significant and positive impact on other people,” AFC Executive Director Don Sumple said. “By flying as a volunteer pilot, you get to do what you want to do and also provide a wonderful charitable act. It’s not just a home run, it’s a grand slam.”

Don remembers a woman emailing him about her son with brain cancer. She lived in a rural area and her child’s best chance for survival was at Duke University. She supported her family of five on minimum wage after her husband lost his job. A round trip commercial flight cost close to \$1,000 per person and they needed to make numerous



Wings of Hope volunteer pilot Jack Taylor with two flight nurses with one of the organization’s specially equipped aircraft.

visits. She was worried about putting food on the table and clothes on their back.

“AFC not only gives our patients access to their needed medical treatment, it also saves them some dollars to maintain quality of life for bare necessities,” Don Sumple said. “It’s horrible for somebody to have

to make a choice between those things. That was eye opening.”

## Many Outlets for Flying Passions

AFC coordinated 2,197 flights during its 2018 fiscal year. Volunteer pilots flew 832 of those flights, spanning 186,097 charitable miles.

In addition to transporting patients with medical needs, AFC also uses aviation for humanitarian efforts. The organization will relocate people suffering from domestic abuse. When floods washed over Nebraska in March, AFC provided relocation flights for survivors and flew in supplies.

“Each one of us only a phone call away from knowing a person in need or being a person in need,” Don Sumple said.

“It touches our hearts because it could easily be us. That drives our organization to help as many people as possible.”

AFC is one of nine charitable flying organizations under the Air Charity Network. Each variant serves a different region of the United States: Central, West, East, Northeast, Southeast, Mid-Atlantic, Oklahoma and Soars (South). Each regional organization operates independently from each other but are part of Air Charity Network, which is the collaborative organization that brings them all together.

There are more than 20 other charitable flying organizations in addition to Wings of Hope and the Angel Flight network, with services ranging from disaster relief, animal rescue, military/veteran benefit and humanitarian missions.

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## More Than a Miracle

Doctors often call Emilee a walking miracle – a label Emilee said she hates.

“I worked my ass off (during my recovery),” Emilee said. “A miracle is something that happens overnight.”

Candidly, Emilee admits she once hated God and blamed him for her pain and suffering.

Looking back, Emilee now suspects her remarkable recovery received at least some divine influence. It wasn't long ago that just talking and walking again seemed like more than anyone could ever ask or even imagine for her. Now at age 27, she can not only bathe and dress herself, but also run, play soccer, wakeboard and cliff jump – after climbing up on her own.

“My personal mantra is ‘everything happens for a reason,’ and I believe God gave me this disease for a reason

– to inspire, motivate and help other people,” Emilee said. “I still battle with my belief like every human being does. I cannot honestly tell you how prayer helps. Everybody was praying for me every day and little by little it started working. Somebody had to have helped me in this process, somebody bigger than me.”

Emilee is also acutely aware of – and extremely grateful for – the critical role Wings of Hope played in her recovery.

“If I hadn't received the right treatment, I might not be here today,” Emilee said.

One other thing Emilee can do now is dance, which she did with her older sister Alaina at the Wings of Hope dinner auction gala in February. Jack was there to watch them. He may never forget the foggy, nasty day on which they met, but this

is the moment he'll always remember when volunteering as a pilot for MAT missions.

“It brings tears to your eyes,” Jack said. “You feel like what you're doing is worth the effort. It's pretty rewarding.”

Interested in getting involved with charitable flying? To find an organization, check out Air Care Alliance's director of organizations at: [www.aircarealliance.org/directory-groups](http://www.aircarealliance.org/directory-groups)



*Dan Kukla is an award-winning writer with work published by ESPN The Magazine, USA Today, Fox Sports and Bleacher Report during a decade of journalism experience. He currently works as a professional “writer guy” in the marketing department of Moneta, a wealth management firm ranked No. 4 in the nation for its combination of size and scale. Dan is the son of MMOPA member Don Kukla, who is also on the Wings of Hope Board of Directors.*

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# Hot Off the MMOPA Hotline

by Kevin Mead

It's been very interesting to answer the MMOPA Hotline over the years. Many of the problems are very common issues that I've seen numerous times.

The focus this issue is on the recent hotline questions regarding a wide range of subjects of which all owners should be aware.

**The oil level is low on my Meridian.**

**What type of oil should I add?**

For most PT6A operators, the Eastman (formally BP or Exxon) 2380 Type II oil is the most commonly used. Always check the engine logbook if there is any doubt. If the 2380 oil is not available, Mobil Jet II oil can be substituted. The oil must be a Type II product.

**2) The oil level is higher on my Meridian after engine shut down than it was a pre-flight. Is that normal?**

It's not uncommon for the PT6 engine to "hide" oil after shut-down. Each engine is bit different, but many engines will move some oil over some time of inactivity from the oil tank into the accessory gear box leaving the oil dip stick or sight glass reading much lower. It's always possible to add oil only to find it way above your normal level after the flight. Many people check the oil level after the flight to establish an accurate reading. Many owners' experiences are different, but most find that stable oil level to be around 3 to 4 quarts low. Anything higher will be slowly pushed out the breather in flight.

**3) My air-conditioning is not cooling the cabin well. (all models)**

Aircraft air conditioning systems are well known for losing the system refrigerant over a much shorter period of time than cars. If the performance

has decreased slowly over time or over the winter season, it would be best to check the refrigerant charge first. Beginning in 1999 all PA46 models built were delivered with R-134 refrigerant systems. All Malibu and pre-1999 model Mirage ships were delivered with the earlier R-12



refrigerant systems. Some earlier ships have been converted to use the R-134 refrigerant because of availability and cost restrictions.

If the system is empty, it's empty for a reason! Servicing the system refrigerant without investigating the leakage and making repairs is a big waste of time and money. It is possible to make a system hold the refrigerant for a much longer period of time, but it requires a lot of effort from the shop.

**4) The cabin temperature is too high in my Meridian. The auto-temp control won't make the cabin cooler.**

There's a good chance that the temp sensor located on the lower left side wall is inoperative. It's not uncommon to find the temp sensor electrical connector disconnected behind the wall after the wall was reinstalled after maintenance. You can verify its operation by applying electrical power then listening or feeling for air movement

from the small grill on the arm rest area beside the LH center seat.

The temp sensor can fail over time requiring replacement. Luckily, it is a fairly common unit used in other aircraft like the Piper Cheyenne and the Cessna Citation. Many rebuilt exchange units are available on the internet.

**5) The cabin pressure dumped on my Mirage in flight for no apparent reason.**

This is so common. Historically, it has been the electrical contacts on the squat switch. The contacts of the switch become burned creating a high resistance in the circuit. This positions the control relay to the ground/dump position. The only affective method of overriding the system is to pull the cabin pressure dump circuit breaker and leave it out. If the squat switch is the fault, the cabin should slowly pressurize at the rate set on the controller. Some pilots have rotated the rate knob

full clockwise to increase the rate of re-pressurization. I always suggest that the cabin pressure circuit breaker be pushed in on approach to prevent any possibility of landing pressurized.

**6) The inboard top wing skin is wearing into the top of both flaps.**

Piper applied plastic chafe tape along the bottom edge of the top wing skins to reduce wear on the flap skins. This tape never really protected the flap skin from the raw edge of the upper wing skin.

Over the years we have applied 2-inch wide chafe tape along the top of each flap to add an extra layer of protection. Please don't use 1-inch tape because it will catch and bind on the upper wing skin. With the chafe tape properly applied, you won't see but just a small section of the tape with the flaps up.

**7) The nose and main struts look low. What level are the strut extensions to be set to?**

Yes, it's normal for the struts to lose some of the nitrogen charge causing a decrease in the normal extension or strut height. The normal frequency for adjustment is once or twice a year. Most aircraft should have a strut service placard visible in each wheel well that describes the proper strut extension or height. Always use nitrogen instead of shop air to inflate each strut. If you find that the strut loses nitrogen too quickly,



there should be action taken to identify the leak.

**8) I'm missing the belly drain hole placards. Are they required?**

They are not required. They are not listed on the required placard list of the POH chapter 2. They

have always been considered a non-required item. I have always thought that the replacement of placards on the belly skins to be a waste. Turbine and piston engine oil on the belly quickly strips these placards from the belly.


**9) My new style Piper fuel filler caps (red) leak around the filler opening.**

Much of the time it's rough or chipped paint around the filler cap areas that cause leakage at the cap seal. The original caps sealed against the top side of the wing skin adapter flange. The new-style red-colored caps seal against the edges of the fuel filler opening. The new-style Piper caps incorporate a vent valve in the top of the cap. If the extended fuel filler caps are installed the two vent holes in each cap must be filled with a hard setting epoxy. This stops fuel from leaking when the outer section of the tank is full;

**10) The nose gear trunnion stop ear has been damaged by a tug operator.**

This happened on my Malibu once when line personnel exceeded the turn limits in a right turn.

Often, they never notice. A close inspection of the nose strut, nose steering horn and rollers, and the nose steering bell crank should be performed before further flight. New parts are not always available so repaired parts should always be considered. From my experience rebuilt parts are always a good option.

I've always told the owners that the turn limits placards should be very visible to the line personnel to help reduce damage. The best protection would be to taxi the airplane to place it will be tied down or stored. 




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*Kevin developed his love for aircraft maintenance and learned to fly while working alongside his father at Mead Flying Service in Lyons, Kansas. He has worked on a wide variety of aircraft over the course of his 34-year career, but he has specialized in the PA46 since 1984. After stints as director of maintenance for shops on both coasts, Kevin founded Mead Aircraft Services, Inc., in 1998. He has been the technical adviser for the MMOPA, an advocacy group for PA46 owners, since 1990, and has lectured widely in the United States and Europe on PA46 maintenance topics. He is a regular contributor to MMOPA Magazine.*

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Those taking part included: Ed Angel, Roy Diaz, Don Green, Keith Mutscher, Suraj Nagaraj, Joey Sager, Rial Taylor, Jene Tebeaux, Gesto Tyrofos, and Chuck Waldrop. 



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## Ad Index

Alpine Airpark.....	29	Legacy Flight Training.....	Inside Front Cover
AirFleet Capital, Inc. ....	14	LightHawk.....	16
Audio Authority .....	42	Lloyd's Aircraft Maintenance.....	21
CIES.....	32	Malibu Aerospace .....	Inside Back Cover
Columbia Air Services, Inc.....	Back Cover	Partners in Aviation .....	9
Cutter.....	47	Pilatus.....	13
Des Moines Flying Service .....	17	Pilot's N Paws.....	49
Epic Aircraft .....	11	Piper Aircraft Inc.....	15
Factory Direct Models .....	24	RC Avionics .....	43
Flightline.....	41	RJ Tutt Aviation .....	19
Hartzell Propellers.....	25	Ron Cox.....	21
High Performance Aircraft.....	26, 27	VAC Veterans Airlift Command.....	48
JetPROP.....	16		

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