FAA Safety BRIEFING

July/August 2011

Your source for general aviation news and information

Above and Beyond

Professionalism and Mentoring in GA

Federal Aviation Administration

www.faa.gov/news/safety_briefing/

The July/August 2011 issue of FAA Safety Briefing *presents ideas for enhancing mentoring and professionalism in general aviation. Articles highlight the importance of the attitudes, skills, and knowledge needed to take you to the top of your flying game.*

Photo by James Williams

Features

Departments

U.S. Department
of Transportation

**Federal Aviation
Administration**

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JOHN ALLEN
DIRECTOR, FLIGHT STANDARDS SERVICE

Jumpseat

Building for the Future

I am passionate about flying. If you're reading this magazine, it's probably because you share that view of aviation. I'd like to think that you would thus approve of the mission statement I have established for the FAA's Flight Standards Service:

> *To assure the safety, while enabling the adventure, commerce and service of aviation.*

Each element conveys a message. First, the FAA's primary mission is to assure aviation safety through setting standards, issuing certification on the basis of those standards, and conducting oversight for continued operational safety. Please remember that it is the responsibility of those who fly, fix, train, and manage in aviation to *ensure* safety.

The second—very important to me—is to communicate the fun and excitement aviation offers, especially at events like the upcoming AirVenture® celebration in Oshkosh. And, finally, it is no exaggeration to say that the modern world could not exist without the role aviation plays in enabling business and service to the community.

Everyone wants this … right?

For those with a passion for aviation, it's hard to comprehend that not everyone shares that view. After all, what's not to like? We tend to be like a movie character played by Meryl Streep, who airily assures her doubtful subordinate that "*Everyone* wants to be like us. *Everyone* wants this life."

There was a time when that statement was true for aviation, but not any longer. Within the next five years, the aviation industry will suffer a shortage of pilots and mechanics. Airlines can no longer rely on the military to provide well-trained airmen, in part because the advent of Unmanned Aircraft Systems (UAS) is changing the face of military aviation. New rules enacted by Congress will require anyone seeking a career in aviation to acquire more flight time and, in some cases, the analytic training and communication education provided by an accredited college degree program. It is no surprise that many are now deterred from an industry in which the pay potential cannot offset the enormous cost of education and certification.

A Vision for Creating Future Flyers

General aviation (GA) is the heart and soul of aviation. It encompasses each of the elements in the mission statement: safety, adventure, commerce, and service. And, given the situation described above, I believe that the long-term health and success of aviation increasingly depends on what happens in GA. That's one of the reasons we're focusing this issue of *FAA Safety Briefing* on instilling professionalism right from the beginning, and at every level of aviation education and training. Mentoring—another focus area—contributes to developing proficient and professionally-minded pilots, as well as to the goal of pilot retention.

We must improve the sophistication of pilot training and qualification, and entice younger generations to choose aviation for a career.

But we can do more. We must improve the sophistication of pilot training and qualification. We must entice younger generations to study math and science … and to choose aviation for a career. We must assure those worthy of the field an affordable way to do so.

An idea I want to explore is to partner with other government agencies and the aviation community on the creation of a U.S. National Aviation Academy (USNAA). Pilot graduates would earn a bachelor's degree along with the pilot certificates and ratings needed for an aviation career. Mechanic graduates would earn an associate's degree, plus an A&P certificate. Funding would be provided through the combined efforts of industry, labor, government, private donors, and academia. Much like the U.S. military service academies, standards for admittance and completion would be rigorous.

Difficult? Definitely. Impossible? Perhaps. Ideas? Bring 'em on!

ATIS Aviation News Roundup

Be a Fan and Follower of the FAA

Last May, the FAA expanded its foray into the world of social media by unveiling its official Facebook page at www.facebook.com/FAA. Together with a Twitter account set up under @FAANews, FAA is well positioned to allow new opportunities for information sharing.

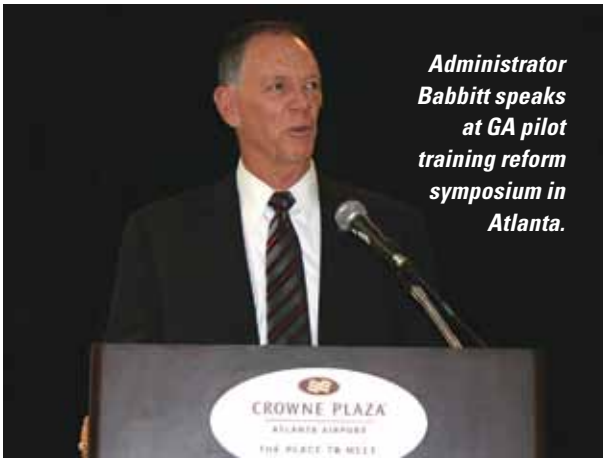
According to Karen Snyder, FAA's Senior Social Media Analyst, FAA's Facebook page accumulated more than 4,000 fans in just the first two weeks of operation and its Twitter feed now has more than 7,000 followers. "We're excited about the ability to leverage these social media tools to communicate and share information in a more interactive fashion," says Snyder. "We hope everyone will 'like' it!"

In addition to timely postings regarding aviation news and events, the FAA Facebook page also features photographs and a frequently asked questions page.

Working Towards a SAFE Solution

On May 4, 2011, more than 150 experts in the flight education community assembled in Atlanta to tackle the issue of how to improve today's flight training experience. Hosted by the Society of Aviation and Flight Educators (SAFE), the two-day General Aviation Pilot Training Reform Symposium provided attendees an opportunity to discuss and explore the problems that currently challenge the flight education industry and brainstorm on ways to move forward with concrete improvements.

Intent on making immediate progress on the issues concerning general aviation pilot training, breakout groups formed at the event were tasked with creating specific ideas for reform proposals. Deliverables on these ideas did not take long. Within two weeks of the symposium, and responding to a recommendation proposed by the Aviation Educators breakout group, Aviation Supplies & Academics (ASA) began offering free PDF versions of its syllabi for download from its Web site. The PDFs include two Private Pilot syllabi and one syllabus each for Instrument, Commercial, and Helicopter. SAFE is currently compiling the recommendations of the other groups and will post them on www.pilottrainingreform.org.



Administrator Babbitt speaks at GA pilot training reform symposium in Atlanta.

Among those attending the symposium was FAA Administrator Randy Babbitt, who was eager to see how changes in flight training and education could assist with development of the FAA's five-year strategy for transforming general aviation safety. "We don't have all the answers," said Babbitt. "We need your help to reduce GA accidents." Stay tuned for more updates on this effort to help secure a more robust future for general aviation.

FAA Issues Revised AD for Cessna Seat Rails

Amending an earlier Airworthiness Directive (AD) on seat rail slippage issues for select Cessna series airplanes, AD 2011-10-09 clarifies and adds new steps to the existing inspection procedures. The additional steps involve inspections of the tang thickness and length on the seat roller housing. The AD also includes improved graphics for inspecting seat track hole wear and for inspecting proper seat lock pin engagement depth. The steps are itemized, in sequence, to provide clearer guidance for anyone performing the inspections. The AD, which became effective June 17, 2011, can be viewed here: http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAD.nsf/Frameset?OpenPage .

Heading the Right Way?

Caution! Your aircraft systems may be vulnerable to magnetic disturbances caused by underground or surface objects made of steel, like rebar buried under taxiways and runways. These objects can cause significant directional heading errors in slaved compass system(s) especially in many low-wing general aviation airplanes. Directional heading errors of up to 40 degrees have been documented following takeoff, and have caused pilot deviations from a loss of separation in several instances.

Photo by Tom Hoffmann

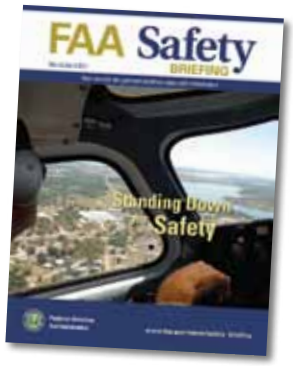
Errors in heading may be indicated on one or both installed slaved directional indicators (HSI, EHSI, PND, etc.) which may or may not be detectable and alerted to the pilot by a comparator monitor, if installed. Also, heading error indications may be observable in the same or different directions, and possibly at greater magnitude depending upon flux density.

The FAA encourages pilots to not spend excessive time positioned over an area known to cause magnetic disturbance. If that's unavoidable, watch for the possibility of slow or rapidly changing indicated heading(s). Follow these steps if you do encounter a heading error:

- Ensure that the heading system(s) are powered in the "MAG" (slaved) mode regardless of the exposure to surrounding disturbances.
- Move from the parking spot in the "MAG" mode, then —
  - Select "DG" once free of detected magnetic disturbances.
  - Begin taxi and slew the affected compass system(s) to approximate heading as indicated by directional reference or magnetic compass.
  - Remain in "DG" until being cleared under line up and wait instructions.
  - After taking the runway, switch from "DG" to "MAG" and observe realignment to the correctly indicated runway heading.
- Observe that at a "fast slave" rate of 3 degrees per second, realignment could take a few extra seconds. ATC can usually accommodate the delay, but make sure that you tell them that your takeoff will be delayed.
- Otherwise, remain in "DG" mode throughout the takeoff and climb, then switch to "MAG" when reaching unaccelerated, level flight. When in "DG" mode, be prepared to accept some drift or precession in the system due to aircraft acceleration.

In Memoriam

It is with great sadness we report the loss of a greatly respected and well-known pilot, Jim Poel, who passed away last January. The cover photo in the March/April 2011 issue of *FAA Safety Briefing* featured Poel flying in his beautifully restored Republic RC-3 *Seabee*. Poel was a retired commercial pilot, an active member in the seaplane community, and a devout advocate of keeping aviation history alive and well.



QR Codes Come to FAA Safety Briefing

The back cover of this issue of *FAA Safety Briefing* includes a graphic similar to the other mysterious black-and-white squares you may have noticed popping up these days on posters and in other publications. Similar in concept to the now-ubiquitous barcode, the QR code – short for "quick response" – is a two-dimensional (matrix) graphic consisting of a white background with black modules arranged in a square pattern. It encodes a web-site address (URL), text, or other data for just what the name implies: quick response without the hassle of trying to remember an obscure URL or enter a lengthy website address on the tiny keyboard of your smart phone.

Here's how it works. Download a QR reader app (many are free) to your camera-equipped smart phone or other mobile device. When you see a QR code printed in a magazine or poster, just launch the app, point the smart phone camera at the QR code, and center the graphic in the box that opens on the app. Within seconds, the QR reader app will scan the QR graphic and launch your browser right to the website or information it encodes. Most readers will also save both the code and the URL for quick and easy reference later on. You'll see several QR codes in this and future issues of *FAA Safety Briefing*. By providing such quick and easy access to supplemental materials, we hope the addition of QR codes will enhance your reading experience with this magazine.

Beyond the Air Show

JAMES WILLIAMS

For many people, the mention of AirVenture® conjures images of air shows and elaborate static displays. But AirVenture is so much more, offering the largest collection of aeronautical knowledge on the face of the earth. While the FAA presents a number of entertaining and informative presentations (in air-conditioned comfort!) at its Safety Center, these sessions are only the tip of the iceberg.

Many type clubs offer specific presentations for your aircraft type. Other groups offer presentations that cover specific kinds of flying, e.g. mountain or backcountry flying. Still others cover maintenance and aircraft construction—EAA's specialty. If you want to know how to rivet a wing rib or apply fabric covering, this is the place for you. Some forums even provide hands-on experience. As someone who laid fiberglass many years ago, I can affirm that a little bit of experience goes a long way toward a productive start.

For owners of amateur-built aircraft, especially those still in the process of building them, there is no greater resource than your fellow visitors to AirVenture. You'll find dozens of owners building the same or similar airplanes. They can provide tips for both building and operating your aircraft safely. You can also find qualified instructors you might not otherwise meet. The FAA's recently published Advisory Circular 90-109, *Airmen Transition to Experimental or Unfamiliar Airplanes*, stresses the importance of receiving the best possible training for a new aircraft. Could there be a better place to seek tips on finding a qualified instructor – and maybe meeting that person on site? You will surely find fellow enthusiasts who can offer their experience on building and testing as well as on initial and recurrent training.

One of the truly great things about aviation, and general aviation in particular, is our culture of sharing and mutual assistance. Most pilots are perfectly willing to swap notes with you on what they've found to be the best procedures or training maneuvers. So if you're lucky enough to be up in Oshkosh this summer, take a break from the air show and take a look at the forum schedules. You never know what you're going to find – but it's bound to be interesting and informative!

James Williams is FAA Safety Briefing's assistant editor and photo editor. He is also a pilot and ground instructor.




FAA Aviation Safety Center

EAA AirVenture Oshkosh®

2011 Forum Schedule

	8:30 – 9:45	10:00 – 11:15	11:30 – 12:45	1:00 – 2:15	2:30 – 3:45	4:00 – 4:45
Monday, July 25	**Delivering the Next Generation Air Transportation System** *Ann Tedford* *Manager, NextGen Messaging Group*	**Runway Incursion - It's a Human Factor** *Dan Cilli* *Runway Safety*	**Spatial Disorientation** *Rogers Shaw* *FAA Civil Aerospace Medical Institute*	**Ditching In Lake Erie (What Happened and Lessons Learned)** *Mark Neal* *FAASTeam Representative*	**FAASafety.gov / Pilot Proficiency Program / Wings** *Bryan Neville* *FAASTeam*	**The PTC & Beyond - An Insurance Insider's Challenge** *Jim Lauerman* *Avemco Insurance*
Tuesday, July 26	**Use of Unmanned Aircraft** *Alan Frazier* *University of North Dakota*	**Ditching and Water Survival** *Robert Shafer* *U.S. Coast Guard Auxiliary*	**Radio and Communications for Flying Companions** *Tina Hartlaub/ Laurie Probst* *Wisconsin 99's*	**Surviving Forced Landings** *Eric Basile* *CFI, FAASTeam Representative*	**The Engine Failure: A Survival Guide** *Lynnwood "Woody" Minar* *FAASTeam Representative*	**Behind the Scenes of Air Traffic Control** *Heather McNevin* *Air Traffic Controller/CFI*
Wednesday, July 27	**Fatigue Challenges in the Cockpit and in the Maintenance Hangar** *Dr. Bill Johnson* *Office of Aviation Safety*	**VFR Charts - Little Known Facts** *John Moore* *FAA, AVN-530, NACO*	**IFR Charts - Little Known Facts** *John Moore* *FAA, AVN-530, NACO*	**The Kings on Risk Management** *John & Martha King* *King Schools*	**Close Calls, Lessons Learned** *Andy Miller* *AOPA/ASI*	**Inflight Medical Emergencies** *Bob Lewis, MD* *FAASTeam Representative*
Thursday, July 28	**Say it Right - ATC Communications** *Andy Miller* *AOPA Air Safety Institute*	**Hot Topics in FAA Enforcement** *Michael F. McKinley* *FAA Great Lakes Legal Counsel*	**Meet the FAA Administrator** *FORUM CLOSED* *Go to EAA Pavilion #7*	**Be AWARE - The Science of Situational Awareness** *Susan Parson* *FAA, Washington, DC*	**Human Factors in Aviation** *Richard Komarniski* *Grey Owl Aviation Consultants Inc.*	**Hot Aeromedical Issues** *Fred Tilton* *Federal Air Surgeon*
Friday, July 29	**Interceptor Operations, TFRs and You** *Lt. Col. Ray Bonita* *NORAD, Peterson AFB, CO*	**Rod Machado Does the Aviation News** *Rod Machado* *AviationSpeakers.com/ AOPA*	**Are You an Accident Waiting to Happen?** *Greg Feith* *Aviation Speakers.com*	**Airspace, Airports and Airmanship** *Wanda Zuege* *Master CFI*	**If You Hear Me, Rock the Tower** *Darren Gaines* *Air Traffic Control CLE Center*	**Practical Tips on Flying GPS Approaches** *Max Trescott* *CFI, FAASTeam Representative*
Saturday, July 30	**Hey Tower, Am I in Trouble?** *Larry Cunningham* *Great Lakes Runway Safety Office*	**Thunderstorm Avoidance Using Datalink Nexrad Radar Part 1** *Dr. David A. Strahle M.D.* *FAASTeam Representative*	**Thunderstorm Avoidance Using Datalink Nexrad Radar Part 2** *Dr. David A. Strahle M.D.* *FAASTeam Representative*	**Prepare for Your Checkride, and Pass** *Larry Bothe Master CFI, DPE*	**Strategy to Avoid Fatal GA Accidents** *Thomas P. Turner* *FAASTeam Representative*	**How to Transition to Light Sport Aircraft Safely** *Joel Severinghaus* *FAASTeam Representative, CFI*
Sunday, July 31	**Friendly Flight Paths / Fuel Awareness** *Safer Skies Movie* *FAASTeam*	**Midair Collision Avoidance / Avoiding Spatial Disorientation** *Safer Skies Movie* *FAASTeam*	**Tips on Mountain Flying / Pilot Operations at Nontowered Airports** *Safer Skies Movie* *FAASTeam*	**Evaluating In-flight Weather / Single Pilot IFR** *Safer Skies Movie* *FAASTeam*		

Please Note - Schedule is subject to change, so please check www.FAASafety.gov for updates.

Be sure to register at www.FAASafety.gov for the Pilot Proficiency Program and notifications of training events in your local area.

Become a part of the FAA SafetyTeam! Make an application as a volunteer FAASTeam Representative at FAASafety.gov.

KIERAN O'FARRELL

Teamwork *at its* Best

The quote, "may you live in interesting times," is rumored to have origins as both a blessing and a curse. However, our response to "interesting times" can create defining moments. One such moment occurred during the 2011 Sun 'n Fun International Fly-In and Expo in Lakeland, Florida.

The weather had been iffy since opening day. The forecast for Thursday, March 31, was bleak, and the day dawned accordingly. The morning saw severe thunderstorms roll across central Florida and tornado watches were in effect throughout the state. The sky grew ominously dark around lunchtime, changing from gray to a light greenish color, when the winds picked up and hail began to fall. We quickly moved as many people as we could into the FAASTeam's National Resource Center (NRC) hangar, and closed the doors.

A tornado touched down shortly after noon, shaking the hangar as we huddled together. As one employee described it, "It felt as if the building was breathing very heavily." We watched through the nearby glass doors as the wind bent large metal flag poles into the ground. The power went off. We could hear destruction all around us for many anxious moments until the storm's fury abated. Then we saw it.... damaged and destroyed aircraft in heaps of twisted metal along with display booths scattered in all directions. Destruction was everywhere and there was a collective gasp of horror.

The NRC was filled with wet, frightened people. A FAASTeam member took the stage and started telling flying stories in an effort to bring some composure to the shaken crowd. Other FAA employees distributed bottled water. Illuminated by flashlights, Administrator Babbitt addressed the group and brought calm to a tense situation. He spoke from his heart about how difficult it is for people who love aviation to see so many aircraft damaged in just a matter of moments. He assured us that we would get through the storm and clean-up process. His remarks filled us with pride and, more importantly, with motivation to move forward.

Event organizers worked with local police to vacate the grounds, and FAA employees used golf carts and vans to help transport people until the grounds were clear. Our people then spent hours picking up trash and debris, repairing fences, and cleaning up the runway and taxiways. Everyone worked late into the evening doing whatever needed to be done.

The next morning I winced as I drove past the damaged or destroyed aircraft now confined to one corner of the airport. I could only imagine what daylight would reveal. But as I looked over the grounds from the NRC's roof deck that morning, I was astonished. There was no noticeable debris and, with only a slight delay at the gates, Friday was open for business as usual. The spectacular Blue Angels flyover was a great way to announce "we're here, and so is this air show!" Patrons and vendors tried to return to normalcy as much as possible. People were still reaching out to help others. FSDO inspectors continued to accommodate heavy walk-in traffic while assuring safety for the event.

Being part of the storm response and clean up made for one of Sun 'n Fun's finest hours. That day we were truly "one FAA," and the definition of real teamwork. I am proud of the professionalism my colleagues demonstrated, and honored to have been part of the team.

Kieran O'Farrell is the frontline manager at the FAA Safety Team's National Resource Center in Lakeland, Florida. She is an active general aviation pilot.

FREDERICK E. TILTON, M.D.
FEDERAL AIR SURGEON

Aeromedical Advisory

Dealing with DUI

I know we all agree that alcohol has no place in aviation. That's why the Airman Medical Application Form 8500-8 includes a question about any arrest or conviction "involving driving while intoxicated by, impaired by, or while under the influence of alcohol or a drug." The FAA also requires airmen to report a DUI arrest or conviction to its Security and Investigations Division within 60 days of its occurrence.

Last year, in response to a 2007 National Transportation Safety Board (NTSB) Safety recommendation, the FAA modified its policy for DUI reporting. The previous policy only required detailed documentation if an airman had more than one:

- DUI,
- alcohol related/drug arrest, or
- conviction.

The revised policy requires an airman with a single DUI arrest or conviction to provide a complete copy of the arrest report and/or court records to his or her Aviation Medical Examiner (AME) so that the AME can determine whether there might be a substance abuse or dependence problem. If the records indicate a recorded blood alcohol content (BAC) of .15 or greater, or if the AME believes that the airman has a substance abuse or dependence problem, he or she must defer the application decision to the Aerospace Medical Certification Division (AMCD) in Oklahoma City.

NOTE: If an airman's BAC is .20 or higher, the Office of Aerospace Medicine will require additional information because a BAC of .20 or greater implies alcohol tolerance which in-turn implies alcohol dependence.

What to Bring

Here are some of the items an airman with a DUI should bring to his or her next aviation medical examination. The AME (or the AMCD) also has discretion to require additional information or documentation if they deem it necessary.

- All court records
- Arrest records (including all statements by the arresting officer, field sobriety test results, etc.)
- Results of any BAC determinations (breathalyzer or actual blood test)
- Any medical evaluations done in connection with the incident
- A written statement describing the event in the airman's own words

We would all prefer that such policies were not necessary, and I sincerely hope you will never need to use the information in this column. However, I believe that this policy helps to make the national airspace safer, and that is the most important consideration. **FLY SAFE!!**

The revised DUI policy provides information to help the Aviation Medical Examiner (AME) determine whether there is a substance abuse or dependence issue.

Fast-track Your Medical Certificate

With FAA MedXPress, you can get your medical certificate faster than ever before.

Here's how: Before your appointment with your Aviation Medical Examiner (AME) simply go online to FAA MedXPress at https://medxpress.faa.gov/ and electronically complete FAA Form 8500-8. Information entered into MedXPress is immediately transmitted to the FAA and forwarded to your AME before your medical examination.

With this online option you can complete FAA Form 8500-8 in the privacy and comfort of your home and submit it before your appointment.

The service is free and can be found at:

https://medxpress.faa.gov/

DR. WARREN S. SILBERMAN

Ask Medical Certification

Dr. Warren S. Silberman and his staff administer the aeromedical certification program for about 600,000 holders of U.S. pilot certificates and process 450,000 medical certification applications each year.

Q: Do you have any updates on the third-class medical debate? Is there any official consideration by you and your staff of eliminating the third-class physical other than for light-sport aircraft?

A: There are currently no plans to remove the requirements for a third-class medical certificate for private pilots.

Q: For several years, I have had an Authorization for Special Issuance for Medical Certificate (waiver) for second-class physicals with the limitations of "corrective lenses" and "Not valid for any class after ..." The reasons for the waiver are type 2 diabetes and a heart stent implanted in 1999. In order to obtain this waiver, each year I must have statements from my diabetes doctor and from my heart doctor. In addition to the statements I must submit lab work and results of a stress test with alternate years being nuclear. As I get older (currently 67) the odds of me needing the class two diminish. Both my doctors have stated to me and in their reports to the FAA that they do not believe I am any more at risk of sudden incapacitation than the general public. Would the requirements for a waiver and third-class physical be less stringent than for second-class?

A: For diabetes mellitus on oral medications, the requirements for each of the classes are the same. An airman must provide a current status report that informs the FAA of the current oral diabetic medications and whether you have evidence of any end organ involvement of your condition. The airman also must provide a hemoglobin A1C value drawn within the previous 90 days.

As for the history of angioplasty and stent to treat your coronary artery disease, the requirement would be a yearly status report, a lipid panel [good and bad cholesterol levels] and a fasting blood sugar, and the results of a maximal exercise stress test. This is to be contrasted with the requirement for every-other-year maximal nuclear stress testing. Coronary heart disease is a condition that will change over time, and the FAA will have requirements for the rest of your flying days.

Q: Having undergone a coronary artery bypass graft (CABG) and now being required to undergo an annual stress test to maintain my third-class FAA medical, is there any chance that my third-class FAA medical would ever be valid for a period longer than just one year?

A: I hope you read the second portion of my answer to the airman in the last question. Unfortunately coronary artery disease is a condition that will change over time. For this reason, the FAA issues an airman a waiver known as an Authorization for Special Issuance. The regulation that allows the Federal Air Surgeon to do this is 14 CFR 67.401. Coronary artery disease with required treatment is specifically listed as disqualifying. For this reason, the airman must demonstrate he or she is safe to fly for the time period that the examination is in effect, and then to demonstrate on a regular basis that he or she remains medically safe to fly. Thus, we "time-limit" the medical certificate. Your medical certificate will be time-limited for one year intervals so we can review regular evaluations from your treating physician and the stress testing.

Send your question to SafetyBriefing@faa.gov. We'll forward it to Dr. Silberman without your name and publish the answer in an upcoming issue.

Warren S. Silberman, D.O., M.P.H., manager of FAA's Aerospace Medical Certification Division, joined FAA in 1997 after a career in the U.S. Army Medical Corps. Dr. Silberman is Board Certified in Internal Medical and Preventive/Aerospace Medicine. A private pilot with instrument and multi-engine ratings, he holds a third-class medical certificate.

RANDY BABBITT

Above and Beyond

Attitude Determines Your Altitude

I have often wished I could mandate professionalism. It is true that the FAA can require some of the behaviors that are indicative of professionalism, and the thickness of the rulebook is evidence of how we've tried to do that. The reality, though, is that true professionalism is a lot more than just rule-driven rote behaviors – *pro forma* does not make a *professional*. Indeed, most definitions of professionalism call it a level of excellence above and beyond minimum standards or basic legal requirements. That's why you don't become a professional simply by earning certificates, adding ratings, or getting a paycheck for flying.

Rather, professionalism is a mindset. It comes from having the attitude, the ethics, and the discipline to do the right thing — every time, all the time, regardless of who's watching.

Photo by Susan Parson

Training and Education

We tend to use the words "training" and "education" interchangeably, but they're not actually the same. Training is the acquisition of practical skills relating to specific useful competencies. Training is teaching someone how to do something. Don't get me wrong. When it comes to teaching pilots how to aviate in terms of good ol' basic stick-and-rudder skills, training is an accurate term and an important activity.

But the trifecta of professional airmanship also requires pilots to navigate and communicate as well as to aviate, and that's where education is so important. Education is an experience that has a formative effect on an individual's character, intellect, or physical ability. There is certainly a training aspect to aviation, navigation, and communication, as those terms are narrowly defined. But education is about teaching a person – in this case, a pilot – how to think, how to aviate no matter what, how to navigate through problems that are not just rote experiences from the textbook or maneuvers guide, and how to use crew resource management (CRM) and single pilot resource management (SRM) to communicate effectively with everyone who can render information or assistance.

To use flight instructor terms — I can do that, because I was one — training alone can take a pilot to the rote and understanding levels of learning. But it takes the formative experience of education to reach the application and correlation levels essential to true professionalism in flying.

Educating a Professional

So how do we educate someone to be a professional? Here are several ideas. And you don't have to be an instructor to put them into practice.

Develop aviation citizens. In civic terms, a good citizen takes actions that strengthen our heritage or contribute to the political process. The concept of aviation citizenship is similar, as it implies actions that respect and strengthen our shared aviation community. Proficiency in aircraft control is only the beginning of aviation citizenship. As outlined in the FAA *Aviation Instructor's Handbook*, the aviation citizen is a pilot who acts to:

- Make safety the number one priority.
- Develop and exercise good judgment in making decisions.
- Recognize and manage risk effectively.
- Be accountable for his or her actions.

Photo by Susan Parson

- Be respectful of the privilege of flight.
- Act with responsibility and courtesy.
- Adhere to prudent operating practices and personal operating parameters.

Use Codes of Conduct. These concepts are also part of the *Flight Instructor's Model Code of Conduct* (FIMCC), recently published by a group of aviators who are passionate about professionalism. I am a real believer in the value that a formal code of conduct can have as a tool to promote safety, good judgment, ethical behavior, and personal responsibility – all components of professionalism. The code offers a vision of flight education excellence, and it recommends operating practices to improve the quality and safety of flight instruction. The FIMCC is one of several similar codes, such as the *Aviator's Model Code of Conduct* and a *Student Pilot's Model Code of Conduct*. You may want to keep these codes in your flight bag as a reference and reminder.

True professionalism is a lot more than rule-driven behaviors – *pro forma* does not make a *professional*.

A personal minimums list is another kind of code that marks a professional. In formal terms, personal minimums refer to an individual pilot's set of procedures, rules, criteria, and guidelines for deciding whether, and under what conditions, to operate (or continue operating) in the National Airspace System.

As the FAA has suggested, however, you might think of personal minimums as the human factors equivalent of reserve fuel. When you plan a flight, regulations require you to calculate fuel use in a

A professional uses a checklist every time, whether it's the first time or the 1000th.

Photo by Raymond G. Stinchcomb

way that leaves a certain minimum amount of fuel in the tanks when you land at your destination or alternate. The reserve fuel is intended to provide a safety buffer between fuel required for normal flight and fuel available. In the same way, a professional sets personal minimums that provide a solid safety buffer between the skills *required* for the specific flight you want to make, and the skills *available* through training, experience, currency, and proficiency. (*For more information, please see the May/June 2006 issue of the* FAA Aviation News.)

You don't become a professional simply by earning certificates, adding ratings, or getting a paycheck for flying.

Use scenario-based training. The FAA is a strong advocate for scenario-based training (SBT). SBT is an approach that uses highly-structured scripts of real world experiences to meet flight training objectives in an operational environment. The goal is to help the pilot develop judgment and decision-making skills. For SBT to be effective in educating a professional:

- Real world experiences need to have a real world context.
- SBT needs to use real world experiences.
- Those experiences need to be realistic.

Here's an example. Cross-country flight training can be structured as planning for a family vacation that the pilot might really want to take in an airplane. The importance of comprehensive flight planning and managing external pressures becomes very real when the pilot has to put it in specific terms such as: how many people and how many bags can be carried, how they have to be loaded, and whether the trip can be safely flown.

Participate in mentoring. Another part of developing professionalism is mentoring. There is a tendency to think of mentoring as a relationship between an older person and a younger one. In fact,

mentoring is a *transfer of experience* from a pilot with more experience or expertise to a less experienced colleague. In today's GA environment, for example, you may have thousands of hours in your logbook, but still have a lot to learn from a newer pilot who happens to be a whiz with the latest glass cockpit avionics. Bottom line: the goal is to help the person being mentored learn things that he or she might have learned more slowly, less effectively, or not at all without the mentor's assistance. I learned a lot from the pilots who mentored me in the various phases of my career as a pilot, and I tried to pass it on by mentoring my students when I was a CFI and my first officers when I was an airline pilot. As I see it, being a professional and a solid aviation citizen means taking advantage of mentoring opportunities, both as a mentee and as a mentor.

The Front Line is the Flight Line

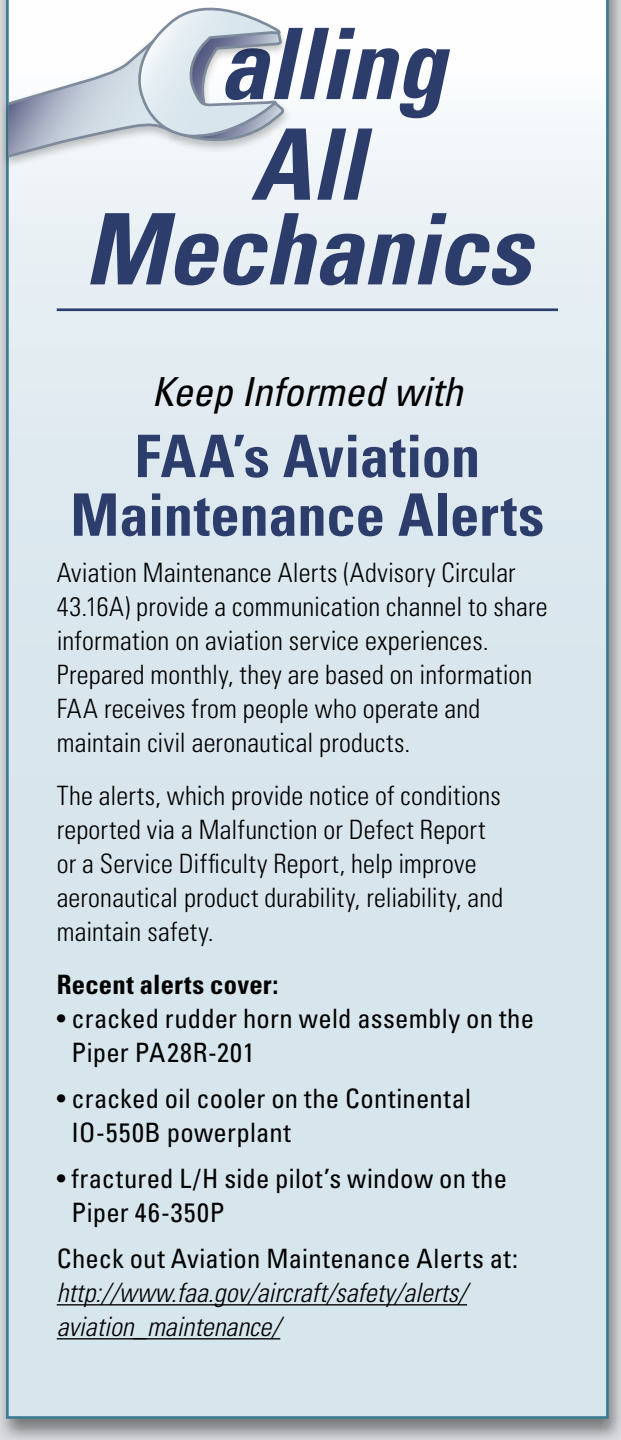
We in the FAA can make rules, write policy, and issue guidance. But those who are on the front lines — or maybe I should say the *flight* lines — in the GA community are the people best placed to make a difference — not just today, not just tomorrow, but for the entire future of aviation. The way you fly, whether it is multiple legs every day or a recreational flight every month, should be consistent with the aviation citizenship principles outlined here. Consistent and disciplined use of practical tools like codes of conduct, scenario-based training, and mentoring are actions that give life and meaning to the concept of professionalism, and can help make professional behavior as natural as breathing.

I'm counting on you to help.

Randy Babbitt is the Administrator of the FAA.

Learn More

FAA Aviation Instructor's Handbook – FAA-H-8083-9A
www.faa.gov/library/manuals/aviation/aviation_instructors_handbook/media/FAA-H-8083-9A.pdf
Best Practices for Mentoring in Flight Instruction
www.faa.gov/training_testing/training/media/mentoring_best_practices.pdf **Aviator's Model Code of Conduct**
www.secureav.com/
FAA Aviation News – May/June 2006
www.faa.gov/news/safety_briefing/2006/media/mayjun2006.pdf



EVERETTE ROCHON

Fly like a PRO

If you're interested in aviation, it's a pretty safe bet that you have seen video of the carefully orchestrated operations on board an aircraft carrier flight deck. You've seen the pitching deck, the closely-packed jets, and the swarms of crewmembers in shirts whose color denotes the individual's role in launch and recovery operations: purple for fuel handlers, yellow for plane directors, red for ordnance, and white for safety observers.

I am lucky enough to have seen it in person. As a 20-year Navy veteran and former S-3B *Viking* Naval Flight Officer (NFO), I spent my share of sea time logging hundreds of "cats and traps" – Navy parlance for takeoffs and landings – on board ship. It's exciting stuff, but it's also demanding. Without uttering a word on the radio during "zip lip" VMC flight operations, up to 40 aircraft circle in a "stack" above the ship. The stack is arranged in an orderly fashion by aircraft type. As each aircraft maintains its own safe interval, a "trap" occurs aboard the ship every 60 seconds.

My military flights were missions, with all of the get 'er done pressure a mission entails. In the GA flying world, my flights are simply flights.

Do you wonder how so many aircraft and so many people can safely operate in such close proximity during radio silence? The answer boils down to one word — professionalism. Professionalism means flight discipline and adherence to regulations, guidance, training and standard operating procedures (SOP). Safe carrier operations rely on the ability of each member of the crew to maintain professionalism and discipline.

Different World, Same Strategy

Though I left active duty and no longer fly in support of war-fighting exercises and operations, I have endeavored to keep my set of professional skills and attitudes as sharp as it was when I logged cats and traps in the *Viking*. Whenever my FAA position offers the opportunity to speak or work with GA pilots, I try to convey the idea that the agency – and everyone else in the aviation community – expects professionalism and discipline from every certificate-holding pilot in every kind of aircraft. That includes everyone from the first-day student in a Diamond DA-20 to the grizzled veteran ATP in the left seat of an Airbus A-380.

As you may have heard, the foundation of the FAA's five-year strategy to transform GA and reduce the fatal accident rate by 10 percent is risk identification, mitigation and outreach. An important component of risk mitigation is to embed a professional attitude and take a professional approach to everything we do in aviation.

Here are a few ideas on how to fly like a PRO in your aeronautical activities.

Personal Integrity

A professional is characterized by a high degree of personal integrity. Among other things, that means unflinching honesty about your physical, mental, and emotional fitness for flight. Don't fly if you can't pass the venerable IMSAFE checklist outlined in the *Aeronautical Information Manual* (AIM 8-1-1). That means ensuring that you are free of Illness, Medication, Stress, Alcohol, Fatigue, or Emotion that could adversely impact the safety of your flight.

Photo by Jon Hyde


Photo by Stephen Early

The color-coded deck crewmen prepare the S-3B Viking for take off.

Still another element of the personal integrity professionals cherish is the ability to recognize and resist external pressures. For most people, this one does not come naturally – it is a skill that is acquired, sharpened, and maintained only through constant focus and discipline. That is because so many external pressures manifest themselves in subtle and insidious ways, making it difficult for pilots to perceive them until it is too late.

Here are a couple of tips for minimizing the effect of external pressures. The first comes from the AOPA Air Safety Institute, which advises pilots to avoid the word "mission" in connection with GA flying. When I was in the military, my flights were missions, with all of the get 'er done pressure a mission entails. Now that I am in the civilian GA flying world, my flights are simply *flights*. Nothing about a flight justifies exceeding personal minimums.

The second tip is to hone your awareness of pressure and, if you detect it in yourself or someone else, STOP. Do not make any additional moves toward flying until you clearly identify, and then mitigate or eliminate, the source of the perceived pressure. Here's a related concept that I have carried with me from my Navy career. When I reported for duty at my first Navy training squadron, I noticed the squadron safety motto in huge letters on the hangar: "If there is doubt, there is no doubt." At any time I am in doubt about what to do, I remove all doubt by taking the safest course of action.

Ready for Anything

A professional is physically and mentally ready for anything that happens. I would like to see my fellow GA civilian pilots prize readiness as much as we valued it during my Navy flying days.

There are several components to a professional's readiness. The first is training and currency. A good pilot never stops training, first to attain proficiency and then to maintain both proficiency and currency. Regardless of your total time and certificate level, it is important to recognize that flying is a skill – and skills erode when they are not sharpened through regular and focused practice.

A second component of readiness is to develop not just plan A, but also plan B, plan C, and even plan D or beyond. Weather does not always follow the forecasters' expectations. Regardless of how well they are maintained, airplanes do not always adhere to their pilots' or mechanics' expectations. Play the "what-if" game with yourself before, during, and after every flight. If you're curious about the "after" advice in the previous sentence, consider that the immediate post-flight period offers one of the best opportunities for learning what you can take from one flight to the next.

A third form of professional-level readiness is disciplined use of checklists. Aviation abounds with checklists and acronym-based memory aids. Choose and use the ones that work for you – the point is to apply consistent structure and discipline.

On Target

A professional strives to be on target in every aspect of the operation. I have always been surprised to see pilots who can apparently hold altitude … 200 feet away from the one assigned! Regardless of the reason for a given flight, aim to stay precisely on altitude, on course, on heading, on airspeed, and on glide path. Practicing for perfection will contribute to professional-level proficiency.

A professional pilot will also be on target in terms of the aircraft's operating envelope. As you may recall from ground school, the "envelope" defines the maximum or minimum limits for safe operation of the aircraft. It generally includes items such as airspeed, load factor, and weight and balance. Don't try to be a test pilot, which is precisely the role you assume if you operate the aircraft outside its established design limits.

Regardless of your total time and certificate level, flying is a skill – and skills erode when they are not sharpened through regular and focused practice.

Though it pains this Navy veteran to quote from an Army recruiting slogan, I urge you to be all that you can be by flying like a PRO.

Everette Rochon is an Aviation Safety Inspector in the General Aviation and Commercial Division. He is a former S-3B Naval Air Training and Operating Procedures Standardization (NATOPS) instructor, and a current ATP and flight instructor.

BRYAN NEVILLE

It *Takes* a Pro to *Make* a Pro:

Professionalism in Flight Instruction

Photo by H. Dean Chamberlain

Quick – who was Ira Biffle? Never heard of him? But who *hasn't* heard of Charles Lindbergh, who was one of his flight students? Let's try again: Who was Charles Todd? Again, virtually unknown today, except for his association with a student - Jimmy Doolittle. And, finally, how about Obie O'Brien? O'Brien was flight instructor to the legendary Chuck Yeager.

Although very few flight instructors become famous, what we do, and how we do it, lives on in those we teach. And, though unknown for themselves, one thing we can safely guess is that the qualities that these three instructors possessed, and transmitted to their famous students, included professionalism. Most instructors will never know the extent of their influence, and most flight students will never be famous. But, as FAA Administrator Randy Babbitt observes in his article on page 10, the tenets of professionalism apply to instructors regardless of whom we teach or the aircraft type. Instructor professionalism is the foundation for excellence and success. We read about it, and we talk about it. So what exactly is it, and how do we embody that crucial characteristic?

Most instructors will never know the extent of their influence.

Characteristics of Professionalism

A business definition of professionalism is "meticulous adherence to undeviating courtesy, honesty, and responsibility in one's dealings with customers and associates, plus a level of excellence that goes over and above the commercial considerations and legal requirements" (www.businessdictionary.com).

Professionalism is typically achieved only after extended training and preparation. This training usually requires significant self-study and practice and is typically accomplished with formal education. It brings to mind the seemingly endless hours of education, training, and practice one undergoes on the path to becoming a doctor. The path to becoming a flight instructor has similar requirements – not just in terms of formal academic study and training, but also in terms of what we might call the unwritten requirements. Let's take a look at a few of them.

Skilled pilot. The aviation instructor must be an expert pilot, one who is knowledgeable, proficient,

skillful, and safe. You should be very proficient on the equipment you use, especially avionics. Be alert for ways to improve your qualifications, your effectiveness, and the services you offer. Stay abreast of changes in regulations, practices, and procedures. Make a habit of referring to the current Aeronautical Information Manual (AIM), Airport/Facility Directory (A/FD), Sectional Charts, Handbooks, Manuals, and Practical Test Standards (PTS). You should also read aviation periodicals, browse the Internet, and attend meetings and seminars. And, of course we recommend that you have (and use) an account on www.FAASafety.gov.

Strong teacher. A flight instructor must have strong skills and abilities in two major areas. First, he or she must be a competent and qualified teacher, with all of the "soft skills" we attribute to teachers. These include communication skills, people skills, and patience.

In order to understand the progress your students are making, you must understand the four levels of learning - Rote, Understanding, Application, and Correlation.

To simplify my own comprehension of these principles, I reduced the concepts to concise, understandable definitions.

Rote	The ability to repeat something which was learned, but not understood
Understanding	To comprehend or grasp the nature or meaning of something
Application	The act of putting something to use that has been learned and understood
Correlation	Associating what has been learned, understood, and applied with previous or subsequent learning, or the ability to apply learning to a specific unpracticed situation

Practical psychologist. You need to understand anxiety and how to address it with a student. You must know that reactions to stress can be normal or abnormal, and be ready to act appropriately. You soon learn that obstacles to learning can be different for each student. You learn how to address impatience, worry, lack of interest, apathy, anxiety, discomfort, illness, and fatigue. You must work within your student's other interests or enthusiasms. You must discover how to help the student with a multitude of troubles; you may even have to show your student how to handle fear.

Also important is your understanding of the laws of learning. Your student's progress will be enhanced if you remember that a student *learns* because of Readiness and Effect, but *remembers* because of Primacy, Exercise, Intensity, and Recency.

Readiness	Ready to learn: strong purpose, clear objective, definite reason. Your student should understand the "why" for everything they do in training.
Effect	Emotional reaction of the student. Pleasant vs. unpleasant
Primacy	The first experience should be positive, functional, and correct
Exercise	Things most often repeated are best remembered
Intensity	Vivid, dramatic, or exciting vs. routine or boring. The real thing vs. a substitute.
Recency	Things most recently learned are best remembered

Capable Coach. The best flight instructors use a syllabus, set achievable goals for their students, and use a well-designed lesson plan. You should personally prepare for each lesson, whether ground or flight, and personally prepare for each individual student. Not having an organized plan is, in fact, a plan…for failure. No two students are the same; they must be treated as individuals. You are the key to their success.

Professionalism is typically achieved only after extended training and preparation, and it usually requires significant self-study and practice.

Positive role model. Consistently using a checklist is another mark of professionalism. We all get excited or rushed at times and the use of a

Photo by Susan Parson

checklist is the only way to ensure we don't forget something. Students will follow the behavior you model, so do it right.

A flight instructor must also have high standards of personal appearance, which means that you must be neat, clean, and dressed in a manner appropriate to the situation. Your personal habits must be acceptable. As a chief flight instructor, I once had a student request a different instructor because his instructor had an overwhelming body odor. I discovered that the instructor worked at a physically demanding job before reporting to the flight school. Moving his first lesson by an hour solved that problem. In addition to personal hygiene, you cannot be rude, thoughtless, or inattentive, and you cannot be profane or obscene.

Sincere. Professionals are true to themselves and to those they serve. Your sincerity of effort must be such that inadequacies are admitted, not hidden, and are corrected for the future. A Code of Ethics is a good reminder of the need for honesty, impartiality, fairness, and equity. (See the Model Code of Conduct in the sidebar)

Inquisitive. True performance as a professional is based on study and research, and professionals are always searching for the "why." Perhaps you can imagine the hard work required to produce a doctoral thesis. Becoming a flight instructor requires that same dedication to learning. Let's look at an example from a private pilot syllabus for flight training.

Let's assume you are going to teach a student to perform turns-around-a-point. We all know this lesson begins in the classroom. To test understanding, you ask your student to place an "X" at the point on the circle where the bank angle is the greatest during the maneuver and then tell you why he chose that point. Assume the wind as shown and left-hand turns. Before you read on, place the "X" on the circle yourself.

Photo by H. Dean Chamberlain

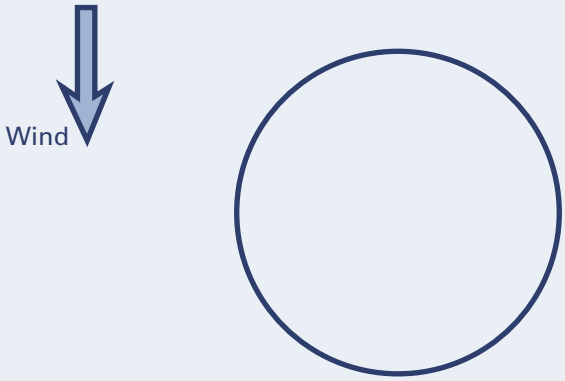


Figure 1

Many instructors place an "X" at the bottom of the circle; some place it half-way between the bottom and the direct left side point. Why are these not the correct answer? Remember, we are searching for the "why." The key is to understand that the aircraft's ground speed is the greatest at only one point. It is at this point that the wind will be pushing the aircraft away from the desired track at the greatest velocity. *(See correct answer on page 31.)*

Creative. You don't have to be a mathematical genius to be a pilot or a flight instructor. While a flight test pilot and an aeronautical engineer may need higher math skills, the typical pilot, and flight instructor, gets by quite easily with the basic addition, subtraction, multiplication and division skills one learns in grade school.

However, a professional flight instructor must have other qualities that could be defined as intellectual skills. These include the ability to reason logically and accurately, as well as the ability to make good decisions. Even though aviation has standard practices for normal and abnormal situations, we must also appreciate that some situations may require thinking outside the box.

You Touch the Future ...

As *Challenger* astronaut Christa McAuliffe famously proclaimed, "I touch the future – I teach!" Whatever your eventual goals in aviation might be, never forget that being a flight instructor is a real job that has real – and lasting – impact. Make it count.

Bryan Neville is an FAA Operations Inspector presently assigned as the program manager for the FAA Safety Team web site, www.FAASafety.gov, with general responsibility for the management of the WINGS – Pilot Proficiency Program and the AMT Awards Program, both hosted on FAASafety.gov. Before coming to the FAA, he worked in general aviation, primarily as a flight instructor and FAA Designated Pilot Examiner. His years of experience have given him great insight into what personal characteristics make a great flight instructor. Chief among these is professionalism.

Flight Instructor's Model Code of Conduct

In April 2011, the SecureAV Permanent Editorial Board released the Flight Instructors Model Code of Conduct (FIMCC) for publication and distribution. Developed by a team of aviation professionals and drawing upon decades of research and experience, the code recommends operating practices designed to improve the quality of flight instruction and the safety of flight training operations.

The FIMCC:

- Promotes flight and ground instructor safety, professionalism, and instructor contributions to the aviation community and society at large,
- Encourages the development and adoption of good judgment, ethical behavior, and personal responsibility,
- Supports improved communications between instructors, students, regulators, and others in the aviation industry, and
- Promotes recognition of instruction as a highly respected and rewarding profession.
- The FIMCC is designed to be adaptable to flight instructors and training organizations at all levels—from light sport to instrument, multiengine; at large flight schools or as independent operators.

The Code of Conduct received extensive industry review and presents a vision of flight training excellence within its seven sections: (1) General Responsibilities of Instructors; (2) Students, Passengers, and People on the Surface; (3) Training and Proficiency; (4) Security; (5) Environmental Issues; (6) Use of Technology; and (7) Advancement and Promotion of Aviation Instruction. The Code of Conduct is a living document and will be periodically updated to reflect changes in standards, practice, and the aviation environment.

The Flight Instructors Model Code of Conduct is the latest in a family of similar codes, each available as a free public service along with supporting materials at www.secureav.com.

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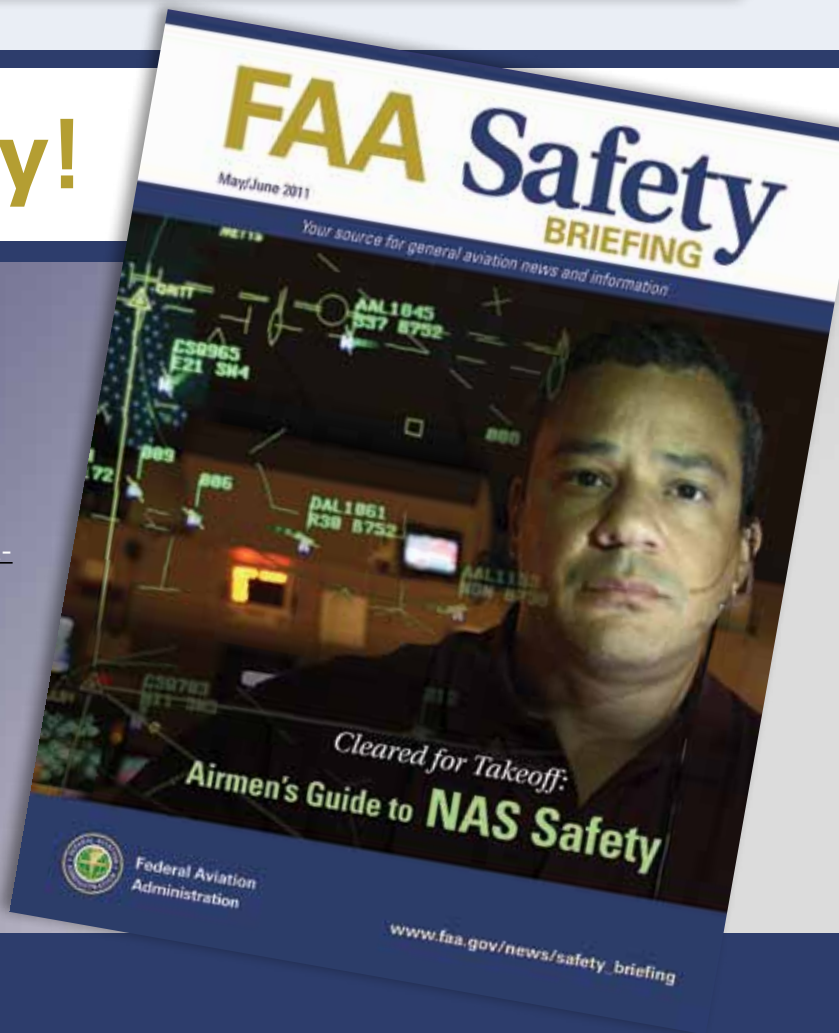


SUSAN PARSON

What Do I Do Now?!

How the Magic of Mentoring Can Propel Your Aviation Learning Odyssey

Photo by James Williams

You did it. The freshly-signed temporary airman certificate attesting to your new qualifications is carefully secured in your wallet. You rightly celebrate the achievement with proud family and friends. And, during this heady time, perhaps the exuberant words of Dr. Seuss in *Oh, The Places You'll Go!* ring in your head:

> *You'll be on your way up! You'll be seeing great sights!*
> *You'll join the high fliers who soar to high heights.*

If your experience is anything like mine, you put the new certificate or rating to work right away. In command of your aircraft, you soar to (relatively) high heights and see some great sights. As the initial excitement fades, though, you realize that being liberated from the structures and strictures of a formal training program can leave you feeling both adrift and – admit it – anxious. As Dr. Seuss's narrator notes, you know deep down that:

> *There are some, down the road between hither and yon,*
> *that can scare you so much you won't want to go on.*

For too many pilots, here is the point where the once high-flying helium balloon starts sinking back to earth. Though you're weary of confining your flights to the geographical or functional limits of your experience, you lack the confidence to be like Columbus and sail off the edge of the known world. Or perhaps you *did* try to push the envelope, only to find that "here be dragons" that scorched your confidence and frightened family and friends who trusted their lives to your still-developing skills.

So what's a pilot to do?!

Enter the Mentor

One way to proceed is to simply wander along the aviation learning path. Not knowing a better way, that's the path that many pilots (including me) pick by default. In my case, that "now-what?!" feeling was most acute when I finished my instrument rating in 1994 and then again when the FAA inspector handed over my initial flight instructor certificate in 1996. In both cases, I understood that I had a license to learn, as the cliché goes, but I wasn't at all clear on what I was supposed to learn, much less how best to learn it. And so, like the epic poet Homer's title character in *The Odyssey*, I stumbled and occasionally bumbled my way through a long and winding voyage of aeronautical discovery.

That's where a mentor comes in. Like the original Mentor, a character in *The Odyssey*, a modern-day mentor is a trusted advisor who provides one-to-one support, encouragement, and advice. You may already be familiar with the role a mentor can play in the workplace. The medical profession uses residency programs to provide supervised real world training for medical school graduates, and many other disciplines use forms of mentoring to help freshly-trained novices transition to real-world application of book knowledge and basic skills. For example, teacher certification boards require a stint of student teaching that pairs the novice with an experienced classroom instructor for both observation and supervised application of knowledge and skills. Mentoring can also be structured to give career guidance, provide a role model, and offer a seasoned sounding board for workplace challenges and ideas. In all cases, though, perhaps the mentor's most important function is to *transfer experienc*e by sharing events and outcomes that can help a less-experienced colleague learn faster while making fewer mistakes along the way.

An aviation mentor can serve the same functions for a less-experienced pilot. Let's look at some specific ways that an aviation mentor can help you navigate the aeronautical learning odyssey more safely and more effectively.

Transfer Experience

The job of an aviation instructor is to impart knowledge, skills, and attitudes appropriate to the certificate or rating at hand through the process of instruction. Although the aviation mentor can certainly play a role in advancing the pilot's knowledge, skills, and attitudes, both the goal and the process are different. Khalil Gibran eloquently captures the concept in *The Prophet*, writing that the point is to "lead you to the threshold of your own mind" by offering experience to illuminate your individual decision-making process.

Though it shares some characteristics with the aviator's favorite sport—hangar flying—a mentor's transfer of experience is a more structured and thoughtful effort aimed at helping the less-experienced pilot apply knowledge, skills, and attitudes gained via the instructional process to individual real-world situations. A good mentor must therefore know not only how to impart "there-I-was" stories of a relevant experience, but also how to listen to the mentored pilot's concerns, formulate questions to help address them, and tactfully offer appropriate feedback.

The mentor's most important function is to *transfer experience* by sharing events and outcomes that can help you learn faster while making fewer mistakes along the way.

A word of advice: Whether you seek to find a mentor or to be one, be careful not to equate a mentor pilot's *total* time with *relevant* time. The mentor pilot must be able to offer experience that is pertinent to the needs and goals of the mentored pilot. For example, an airline pilot will clearly have substantial experience, but if his or her most recent aeronautical activity consists entirely of flying transport category airliners in a crew environment, that experience will not necessarily be relevant to someone flying single-pilot instrument meteorological conditions (IMC) in a typical GA aircraft. By the same token, a 100-hour private pilot who trained in a glass cockpit aircraft could transfer some of that experience to, say, a 1,000-hour pilot who has flown nothing but round-dial aircraft.

Photo by Susan Parson

Photo by H. Dean Chamberlain

Model Good Practices

There is much you can learn from a mentor who is a practitioner as well as a preacher of good aeronautical practices. My primary flight instructor, who also took me through an instrument rating, as well as my commercial and flight instructor certificates, imparted knowledge, skills, and a professional attitude not just through what he said. Though his official role was "teacher" rather than "mentor," his greatest long-term influence arose from how he consistently modeled good practices. The instructor who guided me through multi-engine and multi-engine instructor qualifications has similar characteristics, and I literally trusted her with my life.

Be careful not to equate a mentor pilot's *total* time with *relevant* time. The mentor pilot must be able to offer experience that is pertinent to the needs and goals of the mentored pilot.

In the more recent years of my aeronautical learning journey, several pilots have unknowingly mentored me through their day-to-day actions. One was instrumental in showing me the ropes of long cross-country planning and operations. Another demonstrated the basic principles of crew coordination, and models the kind of calm but watchful demeanor I have sought to emulate in my instructional activities. And it was through flying GA aircraft around the country with still another pilot that I finally began to understand how to evaluate weather. Though he never specifically "taught" me, watching how he approached the process of gathering, evaluating, and applying weather data was invaluable to my learning. In fact, that's what led me to develop the structured weather analysis model that I use today when I teach, write, and present on aviation weather and weather decision-making.

Guide the Flight Path

In the workplace, one of the mentor's main roles is to assist the mentee in setting and achieving career development goals. An aviation mentor can offer similar assistance to a pilot by helping him or her establish and work toward a range of aeronautical advancement goals. For example:

- *Certificates, ratings, and endorsements*. Work toward formal qualifications and privileges is primarily an instructional task, but an aviation mentor can help in a number of

Traits of an Effective Mentor

To be most effective, a good mentor should have:

- Substantial experience that is relevant to the needs and goals of the mentored pilot.
- Good "bedside manner" that is friendly, affirming, non-judgmental, and respectful.
- Strong communication skills that include attentive listening and asking good questions.
- Clear understanding of the mentor's role, which is to support and guide the mentored pilot's efforts to apply knowledge and skills to real situations.
- Clear understanding of the pilot's goals, to include knowledge of how the aircraft is to be used (i.e., recreational flying for fun, personal transportation for business or pleasure, professional operation).
- Personal connection with the mentored pilot.
- Mutual understanding of responsibilities. Both individuals must have a clear understanding of responsibilities—and liabilities—in the mentoring relationship. In general, the mentored pilot should always be PIC.

ways. By offering a sounding board, a fresh perspective, and simple encouragement to help surmount the inevitable learning plateaus, the mentor may play a vital role not only for the individual, but also for the broader goal of pilot retention.

- *Skill enhancement.* An aviation mentor can help a less-experienced pilot with a variety of skill enhancement goals and activities. The FAA's online flight review and instrument proficiency check guides (*see below for links*) both contain worksheets to help pilots, mentors, and instructors develop an individualized plan for setting aviation goals, as well as tips for structuring proficiency development and practice sessions. Similarly, the FAA's online mentoring guide suggests specific ways that a mentor pilot can help a less-experienced pilot gain proficiency flying in IMC.
- *Confidence building.* By providing guidance and, as appropriate, cockpit companionship on skill development flights, an aviation mentor can contribute substantially to building a less-experienced pilot's competence and confidence.

Offer Encouragement

Let's face it: flying isn't easy. Sometimes you think the skills will never come. Or, you may find yourself discouraged by a string of weather or mechanical delays. We've all had days when we wondered if it was really worth the effort it demands. When those days arrive, a mentor's encouragement and support can make all the difference in your aviation learning odyssey.

And, finally, an aviation mentor can help ensure that:

> *Wherever you fly, you'll be the best of the best. Wherever you go, you will top all the rest.*

Susan Parson is a Special Assistant in the FAA's Flight Standards Service and editor of FAA Safety Briefing. *She is an active general aviation pilot and flight instructor.*

Learn More

Conducting an Effective Flight Review
www.faa.gov/pilots/training/media/flight_review.pdf

Instrument Proficiency Check Guidance
www.faa.gov/pilots/training/media/IPC_Guidance.pdf

Best Practices for Mentoring in Flight Instruction
www.faa.gov/training_testing/training/media/mentoring_best_practices.pdf

GA Pilot's Weather Guide (online version)
www.hf.faa.gov/WeatherDecisionGuide/default.aspx

ARLYNN MCMAHON

Mentoring the Mentors

A national mentoring program aimed specifically at aviation educators provides support, leadership, and professional development to new and experienced instructors. The much-anticipated program is the brain-child of the Society of Aviation and Flight Educators (SAFE) and is managed by the SAFE Mentoring Governing Committee.

The program matches expert aviation educators with those seeking assistance or improvement to become world-class educators themselves. "We are very excited about the program," said Donna Wilt, Chair of the Mentoring Governing Committee, adding, "The program was developed with input from members who participated in a needs-survey last year." The program is available to current educators or educators-in-training who are members of SAFE, whether in flight, ground, youth, college, maintenance, or other aviation areas. Even experienced educators occasionally need new insights in new aircraft, or with new technologies and techniques. With this support, participants grow smarter in ways to promote a safer training environment.

Photo by Susan Parson

A Solid Start

In addition to the Governing Committee, the mentoring program has already approved several expert mentors and has paired them with instructors looking for guidance with a variety of aviation and teaching issues. Matching is based on items such as similar professional areas in aviation, experience in a particular aircraft, needed teaching or particular technical expertise, geographical location and more. A unique aspect of the program is that three suitable mentors are recommended to the mentee. The mentee makes the final selection with whom he or she thinks will best suit his or her needs. The goal is low-stress coaching for advanced professional development.

"We tap into the combined experience of a unique membership which includes some of the industry's top aviation educators, including local and national General Aviation Award winners in the flight instructor, aviation maintenance, avionics, and FAA Safety Team categories," notes SAFE's Chief Mentor Arlynn McMahon. She adds, "A few of our mentors contributed to the FAA's Best Mentoring Practices – that's a huge resource. I hope that the mentoring program will become an industry asset as we learn from each other how to raise professionalism in instruction."

To learn more about the SAFE Mentoring Program, visit www.safepilots.org/programs/safe-initiatives/mentoring-program or contact Dr. Donna Wilt, Chairman, SAFE Mentoring Governing Committee at dfwilt@gmail.com, or Ms. Arlynn McMahon, Chief Mentor at arlynn@aerotech.net.

Arlynn McMahon is SAFE's chief mentor and the 2009 National CFI of the Year.

SUSAN PARSON

Checklist

Asking for Directions

When it comes to following instructions, we humans have a habit of stubborn and often self-defeating behavior. Faced with pages of instructions for, say, setting up a spiffy new computer or assembling a cabinet, it seems so much easier to figure it out on the fly. After all, how hard can it be? Hours later, you dive for the directions you previously tossed aside, having learned that what you don't know *can* hurt you.

Bad enough when avoidable operator error gums up a computer or a cabinet, but the results of direction-free, on-the-fly attempts to master a new airplane type can be tragic – and not just for you. "Yes," you say, "but I don't *have* directions for operating the experimental airplane I just finished building." Or, "I don't *need* directions because this airplane can't be all that different." Or, "I don't know how to make sense of all this information."

For any of these issues, help – and directions – are available in the form of two FAA Advisory Circulars (AC). The current edition of AC 90-89, *Amateur-Built Aircraft and Ultralight Flight Testing Handbook*, provides information on testing newly-built experimental airplanes. A recently published document, AC 90-109, provides information, guidance, and recommendations for making the *Transition to Experimental or Unfamiliar Airplanes*.

To benefit most, just *ask*: Have the right **A**ttitude, train for the **S**kills you need, and master the necessary **K**nowledge.

Attitude. This issue of *FAA Safety Briefing* focuses on professionalism which, as FAA Administrator Randy Babbitt writes on page 10, is all about having a do-the-right-thing attitude in every aspect of your flying. In making the transition to an experimental or unfamiliar airplane, risk management is key. That requires, first and foremost, the integrity to admit not only that flying involves risk, but also that the risk is higher when learning to fly an experimental or unfamiliar airplane. The pilot must then have the discipline to methodically identify hazards that create risk, and work to mitigate or eliminate each one.

Skills. To develop AC 90-109, experts from the FAA and industry considered systems, structures, performance, limitations, power plants, and procedures to establish the baseline training and procedural requirements for an operator to fly and maintain the airplane safely. Drawing on substantial experience in amateur-built airplane operations and maintenance, the group established "families," or categories of airplanes with similar handling, performance, configuration, or complexity. It then identified the areas of skill required to safely fly an airplane with those characteristics and offered recommendations for training. *(Note: The AC recognizes that an airplane can be included in more than one family. In these cases, the pilot should develop a training strategy drawn from the appendices for each family.)*

In making the transition to an experimental or unfamiliar airplane, risk management is key.

Knowledge. In addition to the skills training described in AC-90-109 and its appendices, the group identified the areas of knowledge required to safely fly an airplane in a particular family. Consequently, the AC recommends an organized methodology to become competent in the new airplane. This process should include knowledge about systems; procedures (normal, abnormal, emergency); performance; and limitations. An important point: Even if a pilot is experienced and knowledgeable about the characteristics of a particular airplane, transitioning to a new airplane of the same family can still be challenging. As in every other area of flying, take nothing for granted and when in doubt – ASK!

Susan Parson is a Special Assistant in the FAA's Flight Standards Service and editor of FAA Safety Briefing. She is an active general aviation pilot and flight instructor.

Learn More

Advisory Circular 90-109, Transition to Experimental and Unfamiliar Aircraft
www.faa.gov/documentLibrary/media/Advisory_Circular/90-109.pdf

TOM HOFFMANN

Angle of Attack

Join the Club

The Role of Type Clubs in Enhancing Aviation Safety

If you have a hobby or favorite activity, no matter how common or unconventional, there is probably a club somewhere out there that caters to that interest. Auto clubs, TV show fan clubs, and book clubs; these are just a few among the myriad organizations that appeal to nearly anything you can imagine. But how about a club that can help save you time, money, and possibly even your life one day? Sound good? If you're an airman, it most definitely would.

Of course we're referring to aircraft "type clubs," which, for decades, have helped aircraft owners and pilots become more in tune with the performance and safety of their machines. In fact, anecdotal data suggest that members of an aircraft type club are less likely to have an accident than their non-member colleagues. If that piques your interest, please read on.

Getting "Type"-Cast

Aircraft type clubs are organizations formed to support airmen who share a common interest in a specific make, model, or manufacturer of aircraft. Although type clubs vary in how they operate and the services they provide, they generally function as a safety and informational support network to keep members abreast of best practices, as well as any changes or news regarding their aircraft. This is particularly important for a pilot transitioning to a new aircraft type, or one who owns an aircraft no longer supported by the manufacturer.

Events like EAA's AirVenture often have designated parking areas for specific aircraft types.

Photo by Tom Hoffmann

Enhancing safety among type club members is accomplished in a number of ways. It is facilitated chiefly through the availability of technical and safety-related information, and supplemented by the first-hand knowledge and expertise of its members. How this information gets disseminated can vary among different type clubs, but Web sites, publications, and seminars are the more common vehicles.

In addition to making available a ream of online statistics and data about their aircraft, many type club Web sites also use blogs and chat rooms, allowing users to ask questions, post comments, and exchange ideas about anything ranging from which engine oil is the best to use, to where the best airport diners are. "These interactive discussions allow for a constant stream of dialogue that can cover several issues at any given moment," says the membership director for one major type club, who also likened trying to absorb all the information available on its Web site to "drinking water from a fire hose."

This type of open communication has also been the catalyst for some aircraft type club members, particularly those of more recent design, to play a part in discovering and developing safe practices for undocumented issues, sometimes before the manufacturer gets wind of a problem. A good example that surfaced on one type club's online forum addressed what to do when a door inadvertently opens in-flight. Input from various members who had firsthand experience helped determine that more problems came from pilots trying to close the door than from just landing without being distracted by it. Such examples reinforce the safety role of type clubs and demonstrate why so many manufacturers maintain close symbiotic relationships with associated type clubs.

Smaller type clubs, which are often run by a volunteer staff, may not always offer a sophisticated Web site or on-demand technical support. But what they may lack in digital savvy, they often make up for in other ways, like producing informative

newsletters and magazines, as well as organizing safety seminars and pilot proficiency programs for their members. These live programs usually feature speakers well-versed in safety matters germane to their type-specific audiences, and can sometimes be supplemented with additional one-on-one flight training sessions.

Another excellent safety promotion tool some type clubs offer are service clinics, where maintenance professionals will visually check a club member's aircraft for areas or items that are historically problematic. So whether you're more technically inclined, or prefer a more traditional hands-on approach to keeping up to speed on your airplane, you're bound to find a type club learning solution that suits your needs.

My Type of Club

Directories available on the AOPA and EAA Web sites list more than 270 type clubs and flying associations, covering every group of aviators from Cessna, Piper, and Mooney pilots, to those more taken with amateur-built, light-sport, or vintage designs. Then there are niche organizations based on pilot demographics, occupation, or locality and which have targeted audiences ranging from musicians and chiropractors to octogenarians and wheelchair aviators. While these groups don't necessarily focus on the safety aspects of a particular aircraft, they are still extremely useful in keeping members up to date with more generic safety matters, or issues that are relevant to their profession, area of interest, or specific environment.

For example, maybe you're new to the Colorado area and want to expand your knowledge of high-altitude flying. What better way than to chat with experienced mountain flyers in your area?

And in case there isn't a club in your particular area, start one! All it takes is a few folks with a common interest to get it going.

Spreading the Good Word: Safety

In keeping with its strategic plan to reduce GA accidents, the FAA is looking to leverage the tremendous influence type clubs have on aviation safety. One method being considered to help spread the word is to provide aircraft owners with type club contact information during the new re-registration requirements for GA aircraft, as well as when pilots purchase or insure a new aircraft.

"Aircraft type clubs, by virtue of their ongoing promotion of professionalism and safety education, have an inherent benefit that should not be overlooked," says Mel Cintron, manager of the FAA's General Aviation and Commercial Division. "Their importance to aviation safety should be recognized and promoted across the full spectrum of the industry and the GA community."

FAA also made a point to emphasize the importance of type clubs in a recent Advisory Circular regarding the flight characteristics of experimental aircraft. In addition to providing guidance for training and operational experience, AC 90-109 also recommends using type clubs to help build familiarity when transitioning to a new experimental or unfamiliar aircraft.

Type clubs generally function as a safety and informational support network to keep members abreast of best practices, as well as any changes or news regarding their aircraft.

There's a lot to gain from being a member of an aircraft type club: shared information, tried and true tips, trend data, locality-specific issues, not to mention a club's ability to provide important social and professional networking outlets for like-minded aviation enthusiasts. You may also consider joining a type club to offer up some of your own talents and expertise.

Groucho Marx was once quoted as saying, "I wouldn't want to join any club that would have me as a member." Although regarded largely as a tongue-in-cheek remark, Marx's comment could resonate in some ways with pilots who might feel intimidated or lack the experience to feel like they could be a valuable asset to a type club. If you hear that, be sure to let the speaker know about the mutually beneficial value that an aircraft type club can offer to both newcomers and expert flyers alike. And if that doesn't work, grab your Groucho glasses and tell them the "secret word"—safety!

Tom Hoffmann is associate editor of FAA Safety Briefing. He is a commercial pilot and holds an A&P certificate.

For More Information

List of Aircraft Associations and Type Clubs on AOPA Web site
http://data.aopa.org/associations/

List of Aircraft Associations and Type Clubs on EAA Web site
www.vintageaircraft.org/type/index.htmll

2011 General Aviation Awards National Winners

ANNA ALLEN

For the past 48 years, the General Aviation Awards program and the FAA have recognized aviation professionals in the fields of flight instruction, aviation maintenance, avionics, and safety for their contributions to general aviation.

"The awards highlight the important role these individuals play in promoting aviation education and flight safety," said JoAnn Hill, General Aviation Awards program national chair.

Hill also pointed out that mentoring plays a significant role in all aviation professions.

"Every year, winners say they would not have earned this recognition if not for mentors who helped them become what they are," Hill explains. "And virtually all winners have either formally or informally mentored others as well."

This year's winners are no different. Russ Callender, the Avionics Technician of the Year, has been mentoring beginning avionics techs in the Minnesota and western Wisconsin area for decades. Joe Morales, AMT of the Year, credited his father-in-law, an avid pilot, as his mentor.

The CFI and FAA Safety Team (FAASTeam) Representative of the Year, Judy Phelps and Vicki Lynn Sherman, are both 3-time Master CFIs. "This renewable professional standards designation places a very high priority on mentoring as one of the required service activities," says Hill. "Both Judy and Vicki have played a large role in mentoring others in aviation."

Selecting the national winners is a process that recognizes aviation professionals around the country along the way. It begins with local FAASTeam managers at Flight Standards District Offices (FSDOs) and moves on to the eight regional FAA offices. Previous national GA award winners then select the national winners from the pool of regional winners. The FAA Administrator traditionally presents the national awards during a "Theater in the Woods" program at EAA AirVenture in Oshkosh, Wis., in July.

The program is a cooperative effort between the FAA and more than 15 aviation community organizations. In addition to the FAA, support and sponsorship for the GA Awards program is provided by the Women in Aviation International (WAI), Society of Aviation and Flight Educators (SAFE), Professional Aviation Maintenance Association (PAMA), National Business Aviation Association (NBAA), National Association of State Aviation Officials (NASAO), National Air Transportation Association (NATA), General Aviation Manufacturers Association (GAMA), Experimental Aircraft Association (EAA), Aircraft Maintenance Technology (AMT) Society, Aircraft Owners and Pilots Association (AOPA), Aeronautical Repair Station Association (ARSA), and Aircraft Electronics Association (AEA).

Additional support is being provided by Advocates for Aviation Safety Foundation (AASF), Aeronautical Proficiency Training LLC (AVTrain), Master Instructors LLC (MI LLC), National Aviation Safety Foundation (NASF), and Rich Stowell Consulting.

Recipients of this year's national awards are:

Aviation Maintenance Technician of the Year

Joseph "Joe" Morales, Lakewood, Colo.
Denver FSDO, FAA's Northwest Mountain Region

With more than 30 years of aviation experience, as an A&P holding an Inspection Authorization (IA) and a CFI, Joe Morales dedicates a big part of his life to aviation. When he's not at work as chief inspector of two U.S. Air Force Academy repair stations operated by Doss Aviation, he dedicates some of his free time to ensure the safety of others as a FAASTeam representative and a captain in the Civil Air Patrol.

A member of the AMT Society and AOPA, Morales has had a fascination with aviation since he was a child. He built rubber band-powered balsawood airplane models and, to his parents' dismay, flew them from the rooftop of his apartment building. Despite this somewhat treacherous hobby, they nevertheless encouraged his interest in aviation.

Of his many mentors, Morales's late father-in-law, Bob Chamberlain, "my best friend and flight instructor," left a lasting impression. "I think of him anytime I strap myself into an airplane," says Morales. "He taught me to always put my best foot forward while always striving to learn and make myself a better airman, whether it was turning a wrench or flying an airplane."

With a varied career, working as a field Quality Assurance Representative, on the B-2 Stealth Bomber production line, in general aviation, and in the U.S. Naval Reserve, Morales also earned his private pilot certificate and eventually became a CFI and CFII.

Morales became involved in the jet warbird community and was crew chief for a Rolls Royce Viper-powered Aero Vodochody L29 *Delfin*, placing second at the National Championship Air Races in Reno, Nev.

A single father of two young daughters who are the love of his life, Morales continues to carefully divide his time between his two passions: family and aviation.

Avionics Technician of the Year

Russell John "Russ" Callender, Houlton, Wis.
Minneapolis FSDO, FAA's Great Lakes Region.

An avionics technician with more than three decades of avionics maintenance and repair experience ranging from a light sport aircraft to cabin class business jets, Russ Callender focuses on enhancing pilot proficiency and aviation safety.

His interest in aviation was sparked in the 1970s by coworkers who were also members of an aviation club. Callender was mentored by fellow club members and became a pilot. This led to the pursuit of a degree in avionics maintenance and, eventually, Callender established an avionics repair facility.

Having entered aviation fairly late in his professional career, Callender gained the qualities that he calls his "aviation work ethic," rooted in a deep faith, from mentors throughout his life, including his parents and his in-laws. "These early relationships have instilled the basic qualities that endured and are part and parcel of my life's mentoring process that has lead to my professionalism in aviation," Callender explains.

Callender's company, RC Avionics, an FAA-certified avionics repair facility that designs and fabricates test equipment, has recently added electronic flight simulators. His philosophy is that pilot training is an essential ingredient with today's aircraft panel instrumentation. While their aircraft are being upgraded or their panels redesigned, Callender's customers can train on their new avionics in glass cockpit simulators.

Callender also trains and mentors new avionics technicians. Although his business has expanded in capability with a large complement of skilled technicians, the doors have always been open to all facets of aviation. It is not uncommon to have business jets and Piper *Cubs* side by side in the shop.

A U.S. Army veteran and certificated private pilot, Callender is a member of AEA, AOPA, EAA, and NATA.

"Progress in aviation doesn't happen because of a few people getting awards," Callender says, "but by many skilled, technically talented individuals who have made the aviation industry what is today: a rewarding career choice with unlimited opportunity."

Certificated Flight Instructor (CFI) of the Year

Master CFI-Aerobatic Judy Ann Phelps, Santa Paula, Calif.
Van Nuys FSDO, FAA's Western Pacific Region

A three-time Master CFI-Aerobatic, the country's first and only woman to earn that accreditation, Judy Phelps brings a rare but effective feminine perspective to aviation education. She has provided more than 5,000 hours of flight training ranging from basic primary to advanced aerobatics.

Phelps credits several mentors who helped her become the pilot and teacher she is today. "The most valuable lesson and message they all delivered was 'always fly the airplane and never give up,'" Phelps reminisces.

Her mentors include her father-in-law, Bob Phelps, who was "my instructor for my private and signed me off for my CFI checkride at the age of 84," she says. "I was the last person he taught to fly. Today as I am teaching, I always think back to Bob and remember the things he told me."

A CFI and CFII, Phelps owns and operates CP Aviation at Santa Paula Airport (SZP) where she promotes women's involvement in aviation with three female instructors on staff and often more female than male voices on the radio in the pattern.

She credits her mentor, Rich Stowell, with inspiring her to become a flight instructor. "He taught me as a new pilot that airplanes don't fall out of the sky when they are stalled," she says.

Phelps dedicates much of her time to the aviation community as a volunteer, mentor, and instructor and leads FAA Safety Team seminars throughout California. Phelps also sponsors an annual Emergency Maneuver Training program scholarship and tailwheel training scholarships.

An active member of several aviation organizations, including the Society of Aviation and Flight Educators (SAFE) and the Ninety-Nines, Phelps has competed in aerobatic contests in a Pitts and is an International Aerobatic Club (IAC) regional judge.

FAA Safety Team Representative of the Year

Master CFI Vicki Lynn Sherman of DeLand, Fla.
Orlando/North Florida FSDO, FAA's Southern Region

Three-time Master CFI Vicki Lynn Sherman is a teacher, mentor, and aviation safety advocate. Her passion for flying began when she was barely able to see over the Bonanza's dashboard while landing on grass strips and viewing Mount Rushmore from a door-less helicopter. After graduating from college, she earned an airline transport pilot certificate and became a CFI.

Sherman has been inspired in her flight instructing career by her mentor, Victor Johnson, who not only worked with her to get most of her ratings, but also "encouraged me to study and learn the methods to be a successful coach and counselor," says Sherman.

"One of his strengths is his willingness to challenge pilots and CFIs to think critically and creatively on our approaches to teaching flying," Sherman explains.

A member of the Safety Program Speakers Bureau for Florida, Sherman now spends her time promoting aviation safety as a FAASTeam Lead Representative at the FAASTeam's National Resource Center in Lakeland, Fla. She conducts monthly safety programs and arranges for aviation experts to speak to local pilots.

A lifelong supporter, member, and past international president of The Ninety-Nines, Sherman has served at every level of the organization. Currently, she is a permanent member of the Board of Trustees for The Bonnie & Archie Gann Scholarship for flight instructor applicants. Representing The Ninety Nines, she has contributed to Sun 'n Fun, the NASA Aerospace Education Program, and the National Intercollegiate Flying Association.

Sherman is also a member and advisor for the Women in Aviation Florida First Coast Chapter. She mentors women as they pursue their involvement in aviation and educates on women's important roles in the aviation industry.

Sherman is a member of AOPA, EAA, and SAFE and serves in the Civil Air Patrol. She serves on the board of the National Aviation Safety Foundation and is an active member of the Florida Association of Flight Instructors.

Regional winners

We would like to recognize the regional winners who were nominated for the national awards.

AMT: Steven Floyd "Steve" Barbieri, Summerville, S.C. (FAA's Southern Region); Rhonda Dale Cooper, Wilmington, Del. (FAA's Eastern Region); Russell Mark Gaines, Benton, Ark. (FAA's Southwest Region); Arthur Daniel "Art" Gee, Victorville, Calif. (FAA's Western Pacific Region); Robert George "Bob" Schallip, Jr., Barbeau, Mich. (FAA's Great Lakes Region); and Duane Keeley "Chip" Woods, Moscow, Tenn. (FAA's Central Region).

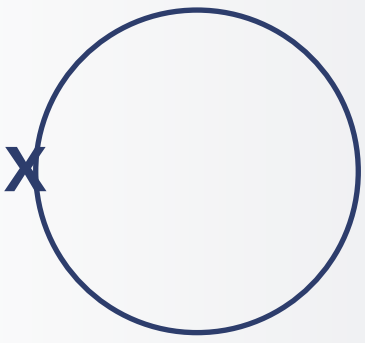
Avionics Technician: Andrew John "Andy" Braun, Hilltown, Pa. (FAA's Eastern Region); Nora Sue Odom, Panama City, Fla. (FAA's Southern Region); and Delbert Leroy "Del" Willeford, Jr., Phoenix, Ariz. (FAA's Southwestern Region).

CFIs: Cleophas Uriel "Cleo" Hodge of Saint Thomas, U.S. Virgin Islands (FAA's Southern Region); MCFI-MGI Theodore Alexander "Ted" Matthews of Aurora, Colo. (FAA's Northwest Mountain Region); Jonathan Carter Moss from Arkadelphia, Ark. (FAA's Southwest Region); Janice Lynn Newman of Rye, N.H. (FAA's Eastern Region); Paul Michael "Mike" Wagers from Louisville, Ky. (FAA's Central Region); and Therese Catherine Whiting of Ann Arbor, Mich. (FAA's Great Lakes Region).

FAASTeam Rep: Gerald "Jerry" Harris of Wilmington, Del. (FAA's Eastern Region); Mark Edward Hartz of Almyra, Ark. (FAA's Southwestern Region); Scott Daniel Johnson is from Eagan, Minn. (FAA's Great Lakes Region); MCFI William Henry "Bill" Schroeder of Carson City, Nev. (FAA's Western Pacific Region); John Robert Scott of Denver, Colo. (FAA's Northwest Mountain Region); and James Edward "Jim" Trusty of Old Hickory, Tenn. (FAA's Central Region).

Anna Allen is a contributing editor of FAA Safety Briefing.

Answer to question from page 18:



In the Next Issue…

Worried about aging? For your aircraft, that is. Then be sure to look for our upcoming feature article on aging GA aircraft in the September/October issue of *FAA Safety Briefing*. We'll cover many of the signs of aircraft aging—some obvious, some more inconspicuous—and show you what can happen when those signs are ignored. We'll also provide tips on how to keep your aircraft young, spry, and able to fly!

MIKE HEMANN

Vertically Speaking

Harvesting Safety

The term crop dusting has fallen out of favor for good reason. Today's agricultural operations are highly technical and can utilize sophisticated technology like GPS to deliver a number of different payloads with almost to-the-inch precision. That's aerial application, not crop dusting. This year aerial applicators in both airplanes and helicopters will treat about 77 million acres of cropland. About 15 percent of the 3,600 aircraft are helicopters. According to FAA statistics between 2000 and 2009, helicopters made up about 13 percent of all hours flown by aerial applicators but accounted for about 17 percent of all accidents. A further 75 percent of those accidents occurred during May through September with near twice as many accidents in July as any other month. Worse yet, in 2010 there were 24 helicopter aerial application accidents, which is double the average number for the past 10 years. Even before 2010, the accident rate for part 137 (aerial application) helicopter operations was higher than both the accident rate for all 137 operations and all helicopter operations.

In a review of NTSB accident data, I found that five causal factors made up 75 percent of all part 137 operations. These were: wire strikes, loss of engine power, controlled flight into terrain (CFIT), rotor/drive system mechanical failures, and fuel exhaustion/contamination. Settling with power and hot refueling/loading of application products were also significant factors.

Summertime conditions can contribute to some of these accidents. Long daylight hours combined with hot fueling/loading (refueling and reloading while the engine is still running) can lead to fatigue since there are few opportunities for breaks during the 12-14 hour work days. Also, higher temperatures lead to higher density altitude which leads to higher power required from aircraft that are often operating near maximum gross weight.

Fuel contamination and exhaustion accidents may result from operators occasionally having to fuel their aircraft from barrels or portable tanks that may not have adequate filters or drains on them. Pilot fatigue, steep turns and pushing the limit between refueling operations can all contribute to fuel exhaustion accidents. Another concern would be maintenance during the busy season. Long flying days leave little time to complete required maintenance, pressuring operators to defer required checks.

The low altitude nature contributes to the dangers faced by aerial applicators. It dramatically reduces the reaction time in the event of an emergency. Even a slight misjudgment can lead to a CFIT accident because of the low altitudes required by the work. Obstacles are also an ever-present threat and usually not well marked because they don't pose a threat to the majority of aviators.

There are many resources available to help operators. These include two recent FAA Safety Alerts for Operators (SAFOs), SAFO 10015, Flying in the Wire Environment; and SAFO 10020, 14 CFR Parts 91, 133, and 137 and Hot Refueling/Loading. These SAFOs advise operators of potential hazards and provide guidance and best practices when conducting operations in these environments. These documents are available at www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/safo/.

Additional sources of information are available from the Helicopter Association International (HAI) website (www.rotor.com) and from the National Agricultural Aviation Association (NAAA) website (www.agaviation.org/).

Mike Hemann is a Continued Operational Safety Specialist and Accident Investigator in the Rotorcraft Directorate. He holds an A&P license and is a private pilot. He was previously an Army helicopter technician and also worked in product safety at Bell Helicopter.

TOM HOFFMANN

Nuts, Bolts, and Electrons

Professionalism in Maintenance

Become a Model Mechanic

What's the first occupation that comes to mind when you think of a professional? A doctor? A lawyer? Maybe a schoolteacher? While these are all important and highly respected professions, they are, after all, just that—professions. To be a *professional* takes much more than just having a title, prestige, or an advanced degree. It's the character and integrity of the person in that profession that defines a true professional. That's true whether your position entails the same exposure and public interaction, or if instead it involves a behind-the-scenes supporting role.

In the aviation industry, those in one of the most important supporting role professions – the Aviation Maintenance Technician (AMT) — are largely unseen by the public. Passengers see and interact with pilots, cabin crew, and customer service agents, all important professions (and hopefully professionals) in their own right. Though some may be predisposed to associate "professional" only with specific and high-visibility occupations, the men and women responsible for the safe upkeep of aircraft are undoubtedly professionals as well.

Are You A Professional?

So what makes someone a professional? Is it someone who is extremely knowledgeable and can solve problems quickly? Or maybe it's the person with the most experience. According to Dr. Bill Johnson, FAA's chief scientific and technical advisor for Human Factors in Aircraft Maintenance Systems, being a professional means going beyond a certain credential, skill, or experience level. "A young person with only two or three years on the job can be just as much a professional as someone with 20 years," says Johnson. Instead, Johnson says it has more to do with what the "Queen of Soul" Aretha Franklin sings about in one of her most famous songs: "R-e-s-p-e-c-t—find out what it means to me…," or to you.

"It all boils down to having respect for the responsibility of the position, as well as respect for your co-workers," explains Johnson. "As an AMT, the public depends on you and often a lot is riding on your ability to perform a job quickly and efficiently. Having a healthy respect for that responsibility means understanding the right skills, tools and technical information needed to do a job safely, and also knowing when to admit you need help."

That same attitude exists for many other professional positions. The public invests a high level of trust in an AMT's abilities and decision-making skills, just as they do for a doctor, law enforcement officer, or a pilot flying them to their destination. The fact that an AMT's actions are not as visible to the public does not make them any less essential.

To be a *professional* takes much more than just having a title, prestige, or an advanced degree.

Similar to the "protect and serve" and "do no harm" oaths other professionals swear to uphold, is the *Mechanic's Creed*, authored by Flight Safety Foundation founder Jerry Lederer. The first paragraph of the creed stresses the significant responsibilities to which an AMT promises to faithfully support:

> *Upon my honor I swear that I shall hold in sacred trust the rights and privileges conferred upon me as a certified aircraft mechanic, knowing full well that the safety and lives of others are dependent upon my skill and judgment. I shall never knowingly subject others to risks which I would not be willing to assume for myself or those dear to me.*

Becoming a Pro

Recognizing and respecting what it takes to be a professional is an important first step, but it must also include actions. Some may consider professionalism a squishy, intangible concept, difficult to directly see and feel. But there are several tangible ways you can perform to be the best professional you can be, and a role model for others.

Stay Fit and Focused. Keep yourself fit for duty at all times. While fitness often refers to a physical

condition the real challenge is to ensure a mental fitness for duty. The quality and quantity of sleep are an important way to ensure necessary mental awareness and attitude. The FAA website (www.mxfatigue.com) is a very good place to review important practical tips about sleep. The basic rule: get about eight hours of sleep every night.

Similar to the "protect and serve" and "do no harm" oaths other professionals swear to uphold is the *Mechanic's Creed*, authored by Flight Safety Foundation founder Jerry Lederer.

Get Smart. You worked hard to earn your aircraft mechanic certificate, spending countless hours studying and practicing skills that may have challenged you beyond your comfort zone. But don't stop there. Maintaining a thirst for learning and an eagerness for challenge is a sure sign of a true professional. Just reading this article demonstrates a commitment to professionalism. Be sure to also check out the learning benefits offered by professional organizations like the AMT Society and Professional Aviation Maintenance Association (PAMA). They frequently host public seminars on all types of aviation maintenance topics. If glass cockpit technology is not your strong suit, consider attending a seminar or course that can expand your knowledge on the subject. And, of course, don't forget the training available with the AMT Awards Program available on www.FAASafety.gov .

Pass it on. Knowledge is only good when you put it to use, and more importantly share it, so try to pass on that wisdom when possible. After all, the AMT profession is already one in which mentoring is an integral part of learning and becoming a good mechanic. Mechanics take pride in mentoring one another, and often find satisfaction in providing guidance for newer employees or co-workers who may be unfamiliar with a certain aircraft or procedure. The mentee demonstrates professionalism by accepting help from another worker. It is a two-way street.

Photo by Tom Hoffmann

Mentoring is an integral part of learning and becoming a good AMT.

Use the Right Tools. Aircraft mechanics have a plethora of tools and resources available to help them perform tasks more efficiently and accurately. A professional will approach any procedure with the same meticulous care a medical team displays when preparing surgical tools for an operation. Are you trained and proficient with the procedures and tools being used? Do you have the most up-to-date manuals and/or data for the procedure you are performing?

And when gathering resources, be sure to make use of the Service Difficulty Reporting (SDR) system (http://av-info.faa.gov/sdrx). This system compiles reports of maintenance issues encountered by mechanics in the field. The power of this tool relies on your input, so be sure to submit any problems you come across. Yes, it takes time to gather the data and photos and submit them online. But think of the possible lifesaving effect that information may have on others. One of the end products of these efforts can be found in AC 43-16A, *General Aviation Maintenance Alerts* (www.faa.gov/aircraft/safety/alerts/aviation_maintenance). This AC, fed by SDR data, contains reports, diagrams, and color photos of specific aircraft issues you may find very helpful.

It's true that the public may not always see or think of what an AMT does to preserve safety. But that is never an excuse to let down your guard or be any less proud of the significant effect you have on safety. A simple, but well-known anonymous quote on professionalism sums up the concept nicely: "It's not the job you do, it's how you do the job."

Tom Hoffmann is associate editor of FAA Safety Briefing. He is a commercial pilot and holds an A&P certificate.

Dr. Bill Johnson contributed to this article. Dr. Johnson is the FAA's chief scientific and technical advisor for Human Factors in Aircraft Maintenance Systems. He holds both a private pilot and A&P certificate.

Flight Forum

IPC Rules

I am a CFII with a multi-engine rating, but not an MEI. Can I give an IPC (Instrument Proficiency Check) in an Aero Commander *Shrike Commander* if I only have five hours in the aircraft myself? Am I legally allowed to sign him off to fly IFR in his aircraft? This is an important safety issue and I would not want to jeopardize his safety.

Barbara Powers

Thanks for your question. The FAA Chief Counsel issued an interpretation in 2008 that stated that an instructor must hold an instrument rating on his or her flight instructor certificate in order to conduct an IPC. However, the interpretation did not address whether the flight instructor must hold a category and class rating on the flight instructor certificate as well.

Though it is not formal policy or a legal interpretation, the historical position is that a flight instructor who holds only an instrument rating on his or her flight instructor certificate may conduct IPCs. According to 14 CFR 61.195, a flight instructor is limited to providing instruction only in an aircraft for which that instructor holds the appropriate category and class ratings. The instrument rating on a flight instructor certificate is offered only at the category level (not class) (14 CFR 61.5(b)(8)). Also, per 14 CFR 61.57(d), however, an IPC is not defined as training.

If you need or want a more formal response, it would be necessary to make a formal request to the FAA Chief Counsel for a legal interpretation.

Communication Etiquette

I enjoyed your article on "What Not to Say." Without question radio communication etiquette leaves much to be desired.

When I started flying back in the late 1960s, flight instructors were quite adamant about the type of transmission that you made on the radio. We were taught to be brief but professional. It was the basic, "*Who* you are, *Where* you are, and *What* you want." As an example: "Anytown Tower, Twin Cessna 1234R at transit parking with Oscar." The problem with listening to others transmit today is that they are not taught this technique, and especially in the non-towered airports, it has become a free-for-all. Radio communications is an art and requires exactly what you described and "learning the lingo."

I do have an issue though with your suggestion to "Don't Take the Active." This is a term that I learned back in the 60s and continue to use it today. Of course the way that I use this is different than what you have stated. I would say something like "Anywhere Traffic, Twin Cessna 1234R taking active runway 24 for straight out departure." I use the runway number as well when I am "clear of the active."

I am personally willing to follow any new standard or protocol if this is directed by the FAA, such as the term "Line Up and Wait." May I ask what you suggest I should use in place of "Taking the Active," and yet keeping the information brief and professional?

Paul Bern

Glad you enjoyed the article. With respect to your question, my primary instructor drilled me in brevity and stressed that "the active" is never appropriate at a non-towered airport. The real point, though, is that pilots who talk about "the active" without using your technique of adding the runway number are not communicating useful information to fellow fliers.

The briefest transmission would be something like, "Leesburg traffic, Skylane 1234, departing runway 17, Leesburg" or "Leesburg traffic, Skylane 1234, downwind for runway 17, Leesburg."

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Let us hear from you—comments, suggestions, and questions: e-mail SafetyBriefing@faa.gov.

SUSAN PARSON

Postflight

All Available Information

Weather conditions were nearly perfect for the night flight my friend Mike and I wanted to make. With flight plan filed and preflight complete, we hopped into the DA-40 Diamond *Star* and started the engine. Within seconds, we noticed a big red X across the G1000 primary flight display's transponder.

Uh-oh. No transponder means no-go in the airspace near Washington DC. When the obvious troubleshooting techniques failed to resolve the problem, we shut down.

But all was not lost (yet). A sister ship – a DA-40 we affectionately call the "Steam *Star*" because of its conventional analog "steam gauge" panel – was available, so we re-filed our flight plan, transferred our gear, and started the preflight inspection.

Uh-oh. The last pilot had not ordered fuel, and there clearly wasn't enough gas to fly to our intended destination. No problem. We called the FBO to order fuel.

Almost 45 minutes later, the sunset was long gone and we were still waiting for our number to come up on the fuel truck's top-off list. But our mutual sense of unease was growing, and it didn't take much discussion for Mike and me to conclude that our scrub-the-flight number *had* come up. We both subscribe to the policy that if a flight accumulates three strikes, it's out.

There is nothing irrational about sticking to a three-strikes policy for scrubbing a flight or some part of a flight.

Now that may strike you (so to speak) as irrational or superstitious, but let me make the case for why neither is true, and why pilot professionalism – our focus in this issue – includes such policies. First, there is nothing irrational about sticking to a three-strikes policy for scrubbing a flight or, for that matter, some part of a flight. Consider the example of what happens when a pilot flying an instrument approach in solid instrument meteorological conditions (IMC) reaches decision altitude and flies the missed approach. Strike one. She requests vectors to try again … only this time, fuel is a little tighter and knuckles are a little whiter. Strike two. Is there anything rational about attempting a third approach? Tensions will be higher, fatigue will be greater, and chances for a bad outcome will multiply.

As for superstition, people in general and pilots in particular take pride in being reasonable. Decisions should be based on facts, not funny feelings, right?

Not so fast.

Though not personally known to me, I count author Malcolm Gladwell among my mentors because I have learned so much from the piercing perceptions and keen insights in his body of work. One of my favorite Gladwell books is *Blink*, which explores the reasoned underpinnings of so-called snap judgments and gut feelings that a narrow definition of reason would compel us to dismiss.

With apologies to Gladwell for oversimplification, *Blink* contends that human beings take in a great deal more information than we can consciously, or "rationally," process. Nevertheless, other parts of the brain do note, process, and catalog information that might eventually be served up in the form of eye-blink conclusions, or in the kind of diffuse but gnawing sense of unease that gripped my friend Mike and me on the ramp that night.

As you enjoy the rest of the summer flying season, don't forget that *all* available information might well include those instant "doesn't look right" observations, and that listening to the "doesn't feel right" instinct might be key to safe flights and happy landings.

Susan Parson (susan.parson@faa.gov, or @avi8rix for Twitter fans) is editor of FAA Safety Briefing *and a Special Assistant in the FAA's Flight Standards Service. She is an active general aviation pilot and flight instructor.*

TOM HOFFMANN

FAA Faces


Pete Devaris

Professionalism: The Last Frontier of Safety

Throughout this issue, we have defined professionalism as "doing the right thing when no one is looking." If you have ever spent time flying in the Alaskan wilderness, you know these words represent more than a personal pursuit of excellence: They are literally words to live by. Just ask Pete Devaris, FAA's Assistant Division Manager for Flight Standards in Alaska. After spending more than 22 years working and flying in this vast territory, Devaris knows just how important professionalism can be in an unforgiving and remote place like Alaska.

"Here, you don't have a choice about being professional," says Devaris, "It's simply a way of survival." Devaris gained a healthy respect for aviation professionalism even before becoming a pilot. As captain of a commercial fishing boat, Devaris managed some of the same grizzled and cantankerous fishermen you see on TV's *Deadliest Catch*, along with directing a team of flying salmon spotters. Circling overhead, the spotters guided ships to prime fishing spots. "With all our competitors, we'd have 50 to 60 planes flying over the same bay at once," recalls Devaris, "and that was often with low ceilings and blowing snow. Working in those conditions required leadership skills at a life-and-death level. If you weren't a staunch professional at all times, it could cost a life."

Those same flying fishermen inspired Devaris to pursue his own pilot certificate, a dream initially manifested by childhood fascination with model rockets. After earning several airman certificates and ratings Devaris went on to become one of the fish spotters he had admired before. "You work with a safety pilot," explains Devaris, "but having your head down looking for fish instead watching out for the other guy was unnerving."

Intrigued with Alaska's adventurous flying, Devaris established a part 135 operation in Kodiak and Southeast, Alaska, and went on to become a mountain pilot; providing climbing support on the glaciers of Denali National Park. He got acquainted with the FAA through conducting multi-engine seaplane training and check rides for FAA inspectors, as a Safety Counselor, and finally as an operations inspector in 2002. The connection between the agency's safety promotion role and his diverse flying skills was a good one. Within two years, Devaris was named National Field Inspector of the Year. He attributes his early success to his supervisor and mentor, Bruce Walker.

"Bruce got to me at a foundational level," says Devaris. And who better to learn from, as Walker himself was named regional and national Mentor of the Year more times than any other inspector. According to Devaris, "the single most important thing—next to safety—is teaching others to be effective mentors." By "paying it forward" to help promulgate a culture of safety and professionalism, Devaris hopes to have a positive impact on the GA community.

It seems to be working. In Alaska, the GA fatal accident rate has been lower than the rest of the nation in four of the last six years, and the 2011 fatal rate (at press time) is currently holding at a record-breaking zero. That is especially impressive since the utilitarian nature of GA flying in Alaska sometimes makes pilots more tolerant of risks. Moving the needle towards what Devaris considers the "last frontier of safety" involves showing pilots exactly what professionalism is, and getting them to do those things that can mitigate risks.

That same logic applies whether you're flying in Fairbanks, or Fargo. "It is incumbent on pilots today to not only be as professional as they can be, but to also be good role models and mentors, even if only in an indirect way," says Devaris. "You'd be surprised just how much people can learn from observing the professional actions of others."

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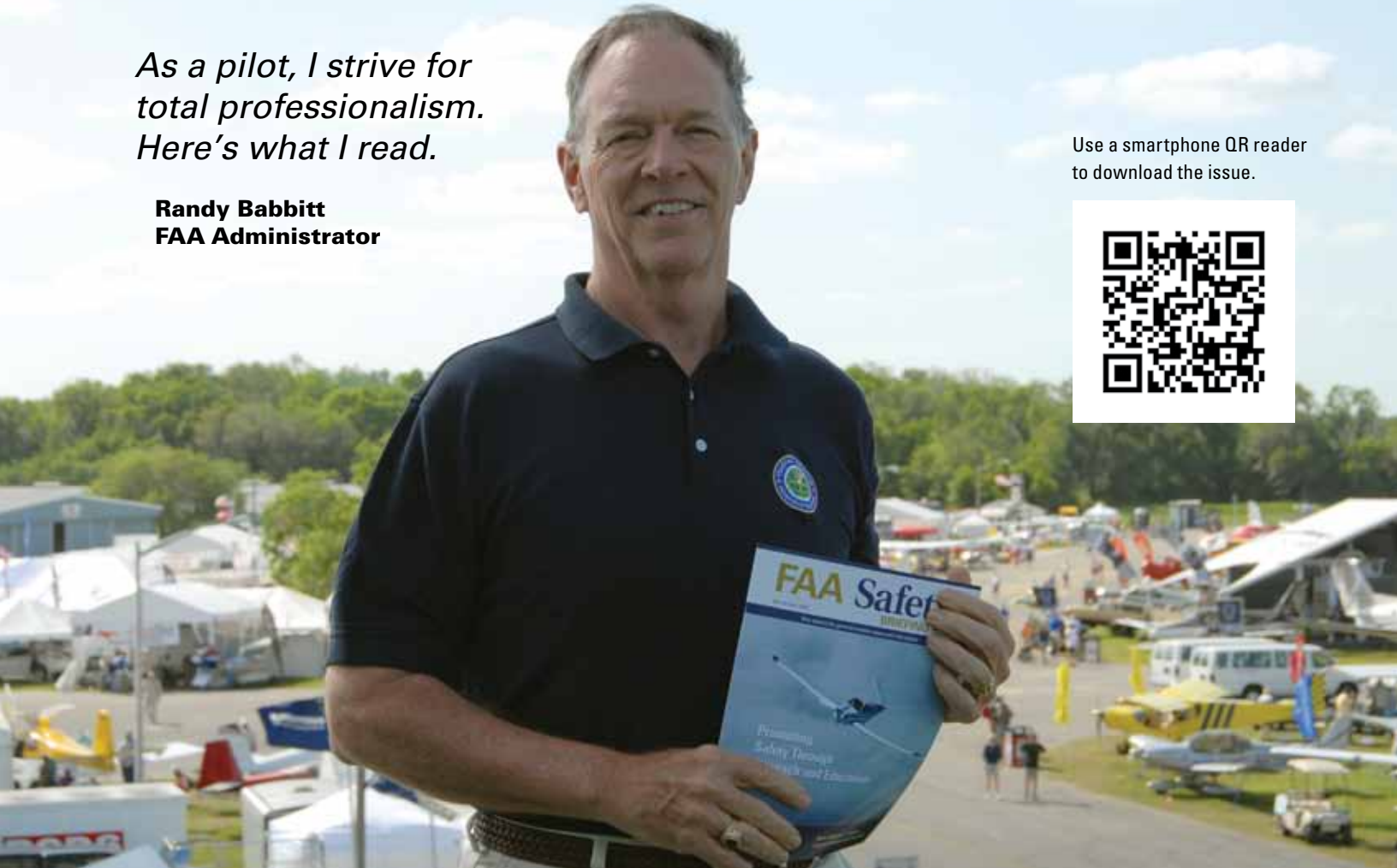
As a pilot, I strive for total professionalism. Here's what I read.

Randy Babbitt
FAA Administrator



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