FAA Safety BRIEFING

July/August 2019

Your source for general aviation news and information

Safety Culture

Federal Aviation Administration

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The July/August 2019 issue of *FAA Safety Briefing* focuses on aviation safety culture. Feature articles focus on what a sound safety culture is and explore ways you can integrate those principles into your everyday flying and airman duties. We'll also look at the many FAA and industry tools available to help you build your own personal safety culture.

Features

Departments

RICK DOMINGO
EXECUTIVE DIRECTOR, FLIGHT STANDARDS SERVICE

It Starts with *You*

Recently I overheard someone complaining about a flight delay. We've all griped about such things — and yes, I've done it myself — so I didn't intervene in the conversation. What I was tempted to do, though, was to make this observation: When you consider the unbelievable complexity of today's air transportation system, delays are not nearly as astonishing as the fact that the system usually runs so safely and so well.

Think for just a minute about all the (literally) moving parts that have to "fly" in disciplined formation for even a single air carrier operation to proceed. Just to name a few obvious ones: The aircraft has to be mechanically and legally airworthy. The maintenance and flight crews have to be trained, as well as legally current, proficient, and rested. Air traffic control has to be staffed. The information technology systems for planning, scheduling, tracking, and so on need to function. Dispatchers and ground crews have to be ready. Then there is Mother Nature, who can wreak nationwide havoc by snarling a single city's weather.

There's more, but you get the idea. Whether it's a large air carrier operation or a personal flight that you make as an individual pilot, a system of people, parts, and particular circumstances is involved. There are redundancies, but every part of that system plays a vital role and, as the cliché holds, any system is only as strong as its weakest link.

You and O_2

In this "AirVenture" issue of *FAA Safety Briefing*, the team will explore a lot of the moving parts in the aviation system safety culture. I want to start the discussion by noting the importance of tending to the area where you have the greatest amount of control: your own health and well-being, both physical and mental/emotional.

When you board a commercial airliner, the pretakeoff safety briefing (and yes, even the most seasoned air travelers should pay attention every time) includes information on proper use of the oxygen masks. There are some variations, but the phrasing generally states that in the unlikely event that supplemental oxygen is needed during the flight, you should always secure your own mask before helping others. It may sound selfish, but it's not. Given how fleeting the time of useful consciousness is if a human being is deprived of oxygen in the flight levels, you have no hope of helping someone else unless you first ensure the continuation of your own consciousness and coherence.

It works that way in our complex aviation system safety culture as well. If you decide to fly or, if you are a mechanic, to fix an airplane on a day when you are distracted by sickness or stress, you have just become the weakest link in the chain of safety.

The broader get 'er done, full-speed-ahead culture that surrounds us isn't very tolerant of things like sickness or stress, but I want to be clear on this point: *the aviation safety culture has to be different*. Today's flight duty and rest rules for air carrier flight crews require not just adherence to the specific duty time limitations, but also to the spirit of those limitations. Each member of a flight crew has to self-certify as "fit for duty" before every flight. Flying or working on GA airplanes demands a similar level of responsibility. In a positive aviation safety culture, there is no shame in saying "not today" if, for whatever reason, you are not fit. By first taking care of yourself, you take care of others and you fulfill your obligation to the entire system.

The broader get 'er done, full-speed-ahead culture that surrounds us isn't very tolerant of things like sickness or stress, but I want to be clear on this point: *the aviation safety culture has to be different.*

GAJSC Safety Enhancement Topic Training Videos

The FAA and the general aviation (GA) community's national #FlySafe campaign helps educate GA pilots about how to avoid loss of control accidents. Training videos are available that cover the safety enhancement topics identified by the General Aviation Joint Steering Committee (GAJSC).

Watch all the videos on the playlist at bit.ly/ga-topics, and make sure to subscribe to the FAA's YouTube channel to get updates when new videos are published.

UAS Detection Systems at Airports

The FAA understands airport safety and security concerns raised by the malicious or errant use of unmanned aircraft systems (UAS). The agency shares these concerns.

In order to support the safe integration of UAS detection systems into the airport environment, the FAA has provided important information and continues to work closely with airport operators who are considering installing UAS detection systems or have already installed such systems on or near their airports. The FAA also provided information regarding the prohibition on the use of non-federal, counter-UAS technologies at or around airports. These systems could pose an aviation safety risk by interfering with aircraft navigation and air navigation services.

The FAA does not support the use of counter-UAS systems by any entities other than federal departments with explicit statutory authority to use this technology, including requirements for extensive coordination with the FAA to ensure safety risks are mitigated.

To view the information for airport operators, go to FAA.gov/Airports/Airport_Safety and look under "Guidance & Policy."

SPOT Device May Interfere with Aircraft Systems

Information for Operators (InFO) bulletin 19006, issued last May, advises private aircraft owners and operators on the safe use of SPOT Satellite Messenger PEDs. The InFO also highlights the potential for intermittent interference to installed GPS navigation equipment when using a SPOT PED. This may also affect aircraft systems that rely on GPS position data, such as ADS-B.

Download the InFO at bit.ly/2Q0o2ug.

FAA International Flight Plan Transition Update

The FAA's Flight Service continues to work with vendors to make software enhancements for automated systems to accommodate the international flight plan format. Pending successful system testing this summer, the transition to mandatory use of the international flight plan format for all domestic and international civil flights is expected to occur in late summer or early fall 2019. The change is part of an effort to modernize and streamline flight planning and supports the FAA's NextGen initiatives.

Several improvements to the international form make it easier and more intuitive for pilots to use and will increase safety, which include:

- An increase in the size of the departure and destination fields to allow a greater variety of entry types, including Special Flight Rules Area (SFRA) flight plans;
- A wake turbulence category (maximum certificated take-off mass) of:
  - H = Heavy (300,000 lbs. or more),
  - M = Medium (less than 300,000 lbs. but more than 15,500 lbs.),
  - L = (15,500 lbs. or less); and
- Transmission of the supplemental pilot data field, which contains pilot contact information, along with the VFR flight plan to the destination facility, to reduce search and rescue response times.

The international format will also allow for integration of performance-based navigation and enhance air traffic control services by allowing for easier identification of aircraft equipment, which can make greater use of the airspace. When using flight plan filing services, all features available today will be part of the new format and provide an additional level of detail required for deployment of the FAA's NextGen technologies and procedures.

Don't wait until use is mandatory; you can use the international format now. Simplified guidance on how to complete an international flight plan with the differences is available for download at bit.ly/2JiUkQN.

Hazardous Inflight Weather Advisory Service Sunsets

As part of the FAA's efforts to modernize and streamline service delivery, Flight Service will discontinue the Hazardous Inflight Weather Advisory Service (HIWAS) in the contiguous United States later this year. HIWAS is a continuous recording of inflight weather advisories broadcast over a limited network of VORs that provide pilots with meteorological information related to hazardous weather.

HIWAS is an inflight service not intended to provide a detailed weather briefing. It uses text-to-voice technology to record a broadcast tailored to fit the needs of a specific geographic location. Flight Service created HIWAS when there was a large demand for briefings to alleviate the workload of specialists and reduce wait times for pilots.

With the advent of the internet and other technology, the demand for information from Flight Service specialists has declined. From more than 3,000 specialists in more than 300 facilities during the early 1980s, staffing has decreased to fewer than 400 specialists in three facilities; radio contacts have dropped to less than 900 calls per day from an average of 10,000 per day.

Flight Service will discontinue the text-to-voice recordings of HIWAS with publication of a final policy notice in the Federal Register, which is expected by Sept. 30, 2019.

Laser Strike Numbers Down

Heightened public awareness of the serious safety risk posed by lasers helped reduce the total number of laser strikes for the second consecutive year. The FAA reported 5,663 laser incidents in 2018, down from 6,754 in 2017 and 7,398 in 2016. However,

Safety Enhancement Topics

July: Stabilized Approach

Maintaining a stabilized approach and landing is a great way to avoid a loss of control situation.

August: Use of Weather Information

A review of best practices on obtaining and using weather information for your flight.

Please visit www.faa.gov/news/safety_briefing for more information on these and other topics.

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**Federal Aviation
Administration**

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The Office of Management and Budget has approved the use of public funds for printing *FAA Safety Briefing*.

CONTACT INFORMATION

The magazine is available on the Internet at:
http://www.faa.gov/news/safety_briefing

Comments or questions should be directed to the staff by:

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- Writing: Editor, *FAA Safety Briefing*, Federal Aviation Administration, AFS-850, 800 Independence Avenue, SW, Washington, DC 20591
- Calling: (202) 267-1100
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the substantial number of reported incidents clearly show that laser strikes on aircraft remain a serious threat to aviation safety.

The FAA and law enforcement agencies are working hard to increase public awareness of the dangers posed by lasers. Watch our video at youtu.be/XfUnGVhKKVc about the dangers of lasers and help us spread the word on social media.

For more information about lasers, see our fact sheet at bit.ly/2IcKnUk.

ADS-B Rebates Have All Been Reserved

The last few hundred of the $500 Automatic Dependent Surveillance – Broadcast (ADS-B) rebate reservations offered to general aviation aircraft owners by the FAA were gone as of May 2019. Since launching the program in September 2016, the FAA has offered 20,000 rebates to qualified applicants.

Should any of the reservations be returned, the agency will make them available each Wednesday at 1 p.m. Eastern Time on a first-come, first-served basis. Go to faa.gov/nextgen/equipadsb/rebate.

The FAA rebates were made available to encourage owners of fixed-wing, single-engine piston aircraft to equip with ADS-B Out avionics, which will be required in certain controlled airspace by Jan. 1, 2020.

The Use of ADS-B Out in Support of RVSM Operations

Last December, the FAA amended Appendix G of part 91, Operations in Reduced Vertical Separation Minimum (RVSM) Airspace, making authorization for operations in RVSM airspace less complicated. However, the change is not just equipage, but rather about how the FAA monitors altitude-keeping performance. To conduct RVSM operations, an operator's aircraft must not only be properly equipped, but must also meet specific RVSM Altimetry System Error (ASE) performance standards. ADS-B Out equipage alone, as required by Appendix G, section 9, allows for enhanced monitoring of ASE, but does not assure ASE containment. To assure safe operations, the operator must determine the RVSM airworthiness of the aircraft prior to conducting RVSM operations under the new Appendix G provisions.

The FAA is observing that some operators are considering operation under the new rule with aircraft not previously certified for RVSM operations, or aircraft with certified designs that have not been maintained to RVSM standards. For more information, go to bit.ly/rvsm-docs.

MICHAEL BERRY, M.D.
FEDERAL AIR SURGEON

Clearing Medications for Flying

One of the most common questions we receive from airmen in the Office of Aerospace Medicine is, "Can I take X medication?" Less frequently we are asked, "How does a medication get cleared for use while flying?" Let's explore both of these questions.

It's important to remember that although a medication may be allowed, that does not automatically mean it is safe for you to fly while using it. You must first consider the underlying condition for which the medication is used, as well as your own particular reaction to that medication.

To be cleared, a medication must first be approved by the Food and Drug Administration (FDA). This means the FDA has determined that the benefits of the product outweigh the known risks for the intended use. The FDA does not take into account specific occupational impairments, although they may issue warnings against use of a particular medication in certain conditions, (e.g., when operating dangerous machinery.) The FDA does not evaluate medications for use in the flight environment.

To clear a medication for airman use, we usually require it to be FDA-approved for a full year. Occasionally, side effects or toxicities that were not recognized in the initial studies may be discovered in this post-introduction period.

We do not evaluate a new medication until the FAA receives an application for a medical certificate on which an airman indicates he is stable, free from side effects, and is benefitting from a particular medication that has not been previously cleared. These requests are screened by our Doctor of Pharmacy, who reviews the available information on the medication. The information is then reviewed by a panel of FAA staff physicians on the Pharmacy and Therapeutics Committee for aeromedical suitability. Depending on the medication, we may also request an opinion from a Federal Air Surgeon Clinical Consultant in the relevant specialty. The final clearance decision is made on my behalf by the FAA's Director of the Medical Specialties Division.

It's important to remember that although a medication may be allowed, that does not automatically mean it is safe for you to fly while using it. You must first consider the underlying condition for which the medication is used, as well as your own particular reaction to that medication.

The sheer volume of new medication requests has been staggering, but the addition of our pharmacist and an automated system for medication review have positioned us to better meet the needs of airmen. Medication review is a dynamic process for both the FDA and the FAA. New information that we must address is constantly emerging on both new and old medications. In all of this change, though, our task remains clear: safety is job one.

Dr. Michael Berry received an M.D. from the University of Texas Southwestern Medical School, and an M.S. in Preventive Medicine from Ohio State University. He is certified by the American Board of Preventive Medicine in Aerospace Medicine. He served as an FAA Senior Aviation Medical Examiner and Vice-President of Preventive and Aerospace Medicine Consultants for 25 years before joining the FAA. He also served as both a U.S. Air Force and NASA flight surgeon.

Learn More:

"Making a List," FAA Safety Briefing, Jan/Feb 2019
go.usa.gov/xmfkq

"From FDA to FAA," FAA Safety Briefing, Jan/Feb 2013
go.usa.gov/xmfkM

Condition Inspection

LEO M. HATTRUP, M.D.

Melanoma

Skin cancer is a very common form of cancer in the United States, according to the National Cancer Institute. Caused by damaged DNA, skin cancer usually results from ultraviolet (UV) radiation, typically due to sun exposure, but it can also be caused from tanning booths.

The most dangerous type of skin cancer is melanoma. The Skin Cancer Foundation estimates that more than 190,000 new cases of melanoma will be diagnosed this year.

The ABCs of Melanoma

Most non-melanoma skin cancers, with early diagnosis and proper treatment, are not life-threatening and are typically curable with excision. However, melanoma has only a 50/50 chance of being "in situ" (non-invasive) at the time of diagnosis and "curable" with simple excisional surgery. Pilots with melanoma in situ can be returned to flight duties relatively quickly. On the other hand, if the melanoma has already broken into the skin's deeper layer at the time of diagnosis, there is an increased risk of recurrence and metastatic (distant) disease, including metastases to the brain. The latter has significant aeromedical and health implications. Both the treatment and evaluation are more involved for the deeper melanomas, resulting in increased downtime for the pilot before he or she can be safely returned to flight duties. The take-away here — do not delay diagnosis and treatment.

The best strategy to prevent melanoma is to avoid UV exposure as much as possible, especially the midday sun. Block UV exposure by wearing hats, long-sleeved shirts and pants, combined with sunscreen. In addition, routine screening (either self-screening or by your primary care provider) is essential for early detection if melanoma does develop. While those with lighter skin are at the highest risk, we do see melanoma in all skin tones.

Some will develop melanoma despite proper preventive measures, and it can even appear in parts of the body typically not exposed to the sun, such as the soles of the feet. Melanoma often appears as a mole or freckle that is dark, uneven, or has changed in size or shape. The National Cancer Institute recommends using the ABCDE model for inspection.

- **A**symmetry — the shape of one half of the mole or freckle does not match the other half
- **B**order — the edges are ragged, blurred, or irregular
- **C**olor — the color is uneven and may include shades of black, brown, and tan
- **D**iameter— there is a change in size, usually an increase
- **E**volving — the mole or freckle has changed over the past few weeks or months

For most airmen, the diagnosis of melanoma will not cause a significant, long-term disruption to flying. If you have been diagnosed with a melanoma, the most important thing is to get good treatment and follow up. As noted above, initial treatment for all stages of melanoma is typically surgery, which may be curative if the melanoma is caught early. The more advanced the melanoma, the more involved the surgery. The FAA will require the treatment notes, as well as any imaging and pathology reports from the excision. An excised melanoma in situ is not an aeromedical concern if the reports show no melanoma outside the excision margins. Your AME should be able to issue your medical certificate once the wound from the excision has healed. For more advanced melanoma, the AME must defer the decision to the FAA.

For deeper or more complicated (invasive) lesions, additional treatment may be required such as chemotherapy, radiation, and immunologic therapies. Recent advances in the past few years are almost miraculous and individuals are now surviving advanced stages that were almost universally fatal prior to immunotherapy. At these advanced stages, once the condition is stable, a Special Issuance is required and is considered on a case-by-case basis. While the FAA does not allow individuals to fly while in active treatment, most are returned to flight status after successful completion of treatment and after any side effects from the treatment have resolved.

Bottom line: minimize exposure to UV radiation, do self-inspections, and have suspicious lesions evaluated early, rather than late.

Leo M. Hattrup, M.D., received a bachelor's degree from Wichita State University, a master's in public health from Harvard University, and a doctorate from Vanderbilt University. He is retired from the U.S. Air Force in which he spent the majority of his career in aerospace medicine. He is board certified in aerospace and occupational medicine. He is a certificated flight instructor and enjoys flying airplanes, helicopters, and gliders.

EAA AIRVENTURE OSHKOSH 2019

FAA Safety Center Forums

July 22 – 28, 2019

	8:30 – 9:45	10:00 – 11:15	11:30 – 12:45	1:00 – 2:15	2:30 – 3:45	4:00 – 5:15
Monday July 22	**Unmanned Aircraft Safety Team (UAST)** Greg Deeds **WINGS: AK2** AFS091841	**Hypoxia and Pilot Performance** Bruce Wright FAA-CAMI **WINGS: BK3** AFS091843	**When Engines Go Silent** Larry Bothe CFI, IPC **WINGS: AK2** AFS091845	**Surface Safety Hot Topic Panel** Tom Frakes, Cheri Walter & Margit McKee **Wings: BK3** AFS091846	**ADS-B & Me** Mark Lee Carpenter Avionics **Wings: BK3** AFS091847	**Approaches That Can Kill** Ray Heyde CFI, AGI **Wings: MK2** AFS091848
Tuesday July 23	**I'm a Pilot, Not a Meteorologist** Ian Johnson FAA NextGen **WINGS: AK2** AFS091849	**Using an Engine Fire to Keep the Ice Off & Other Amazing Stories** Gary Reeves ATP, CFI, CFII, MEI **WINGS: BK3** AFS091850	**Safety Risk Management** Woody Minar DPE, CFI, CFII, MEI **WINGS: BK3** AFS091851	**Secrets of the Airplane Whisperer** Susan Parson FAA **WINGS: BK3** AFS091852	**Loss of Control** Catherine Cavagnaro Ace Aerobatic School **WINGS: MK2** AFS091853	**How Do We Stop Losing Control of Our Airplanes** Bob McCabe CFI, CFII, AGI, IGI **WINGS: AK2** AFS091854
Wednesday July 24	**Trusted Operator Program for UAS Systems** Joseph Cerreta Embry Riddle **WINGS: BK3** AFS091855	**Ditching and Water Survival** COMO Robert Shafer U.S. Coast Guard Auxiliary **WINGS: MK2** AFS091856	**TFR Avoidance** Lt Col Mitchell Walrod NORAD **WINGS: BK3** AFS091857	**The Kings on Avoiding Unwanted Adventure** John and Martha King King Schools **WINGS: AK1** AFS091858	**Best of the Future of Flight Service** Joe Daniele Leidos **WINGS: BK3** AFS091859	**Mountain Flying** Mary Build CFII, FAASTeam Rep **WINGS: BK3** AFS091860
	Special Evening Presentation: "Aviation Mastery" • Jason Schappert, MzeroA.com • **6:00-7:15pm** • **WINGS: AK2** AFS091928					
Thursday July 25	**General Aviation Awards** **CFI of the Year** **AT of the Year** **FAASTeam Rep of the Year**	**Accident Investigation** Greg Feith Retired NTSB **WINGS: AK2** AFS091875	**"No Session"** Meet the Administrator @ Theater in the Woods ***No Session***	**Taking Command: Leadership for GA Pilots** Sarah Rovner ATP, CFI, CFII, MEI **WINGS: MK2** AFS091876	**Weather - A New View from Above** Patrick Ayde National Weather **WINGS: BK3** AFS091877	**Fuelish Thinking** Steven Goetz DPE, CFI, CFII, MEI **WINGS: BK3** AFS091878
Friday July 26	**FAA Medical Update** Dr. Michael A. Berry FAA Federal Air Surgeon **WINGS: BK3** AFS091882	**Lessons Learned from NTSB Accident Investigations** Mike Folkerts NTSB **AMT-WINGS: BK3** AFS091883	**Resolving Owner/ Mechanic Disputes** Mike Busch Savvy Aviation **AMT-WINGS: BK3** AFS091884	**AOPA Air Safety Institute Investigates Weather Accidents** Andy Miller AOPA-ASI **WINGS: MK2** AFS091987	**How to Talk to Air Traffic Control** Heather McNevin CFI, ATC **WINGS: AK2** AFS091886	**Secrets Only Pilots Know About Airports** Tom Slater FAASTeam Rep **WINGS: BK3** AFS091887
Saturday July 27	**Powered Parachutes** John Hall USPPA Instructor **WINGS: AK2** AFS091888	**Thunderstorm Avoidance NEXRAD Critical Update** Dr. David Strahle, MD **WINGS: AK2** AFS091889	**Resilient Navigation** Vince Massimini Rick Niles, MITRE Corp **WINGS: BK3** AFS091890	**Loss of Control: The Most Frequent Cause of Fatal Accidents** Ed Verville DPE, CFI **WINGS: BK3** AFS091891	**Mountain Flying with Reference to Soaring** Colin Aro Cool Rain Aviation **WINGS: BK3** AFS091893	**UAS Regulatory Updates** Jim Malecha FAA ASI **WINGS: BK3** AFS091894
Sun., July 28	**Closed**					

Appropriate **AMT / WINGS** credit will apply to events by using the associated **#AFS091XXX** listed in each box

FAA Forum & FAA Exhibit Hall Opens Daily at 8:30 a.m.
Schedule is subject to change; for updates check the QR code to the right or go to https://bit.ly/FAAForums19

Photo Courtesy of Jeff Smith

CULTURE CLUB

By Jeffrey Smith

How the FAA's Compliance Program Contributes to Safety Culture

Compliance Program Background

The FAA's Compliance Program is a foundational aspect of the aviation safety culture. It is built upon risk-based decision making (RBDM). Put simply, RBDM promotes making informed choices that take into account all relevant data. In terms of compliance with the regulations, this has several implications:

- Enforcement (such as a certificate suspension or civil penalty) is not always the best solution.
- When an individual or organization is willing and able to take corrective action, the FAA can use a non-enforcement response (known as a compliance action) to correct the issue.
- The focus is on the underlying root cause and actions to ensure the problem remains fixed.

The Compliance Program (launched as the Compliance Philosophy in October 2015) is certainly not an isolated endeavor. In fact, it is another step in the evolution of safety culture that has been occurring for decades. The agency set an early cornerstone for this philosophy back in the mid-1970s with the advent of the Aviation Safety Reporting System (ASRS) program. Associated with the familiar term "NASA Report," this system allowed for the voluntary sharing of information with the FAA while providing protection from enforcement sanctions. For more on the ASRS program, read "Break a Rule? See a Safety Issue?" in this issue of *FAA Safety Briefing*.

Additional FAA/industry partnerships have since formed. These programs have focused on safety data analysis, information sharing, and identifying and understanding risks before accidents or incidents occur. (See Figure 1)

Of course, deviations from the safety standards will still occur. Even inadvertent mistakes can have a serious, adverse impact on your safety and you must address them. You need a strong safety culture to address existing and emerging hazards.

Safety Culture Considerations

With this background in mind, let's take a look at a few considerations on how everyone in the NAS can contribute to the safety culture. Note that this list is not exhaustive, nor are the paragraphs exclusive to one another.

Voluntary Compliance: The responsibility for aviation safety does not rest solely with the FAA. Actually, the majority of general aviation operations occur without direct FAA oversight. As a participant in the NAS, it is expected that you will voluntarily comply with the regulations and other appropriate safety standards.

Knowledge and Skills: In order to best identify hazards and mitigate risks, you should strive to keep current on safety trends. You should also maintain the skills and knowledge pertinent to your certificates and privileges. Examples include reading publications such as the *FAA Safety Briefing*, attending FAA Safety Team (FAASTeam) seminars, and seeking flight instruction beyond the minimum flight review.

Safety Management Procedures: Everyone should develop procedures to prevent deviations from regulatory standards. These procedures do not have to be complex, but they do need to ensure

compliance with the regulations, identification of hazards, risk analysis, and mitigation of any threats. Examples include using a checklist, developing personal habits that you repeat for each flight, using a Flight Risk Analysis Tool or FRAT, and adhering to your personal minimums.

Unique Hazards: The regulations address hazards that affect entire populations, such as all pilot schools or all mechanics. However, some hazards are unique to specific systems, operations, or environments. While there may not be a rule addressing such hazards, they still must be controlled. For example, if you must fly at low altitudes, you may need to take additional steps to avoid terrain, obstacles, or other aircraft.

Focus on Behaviors, Not Outcomes: The outcome of an event is not what determines whether your behavior is acceptable or unacceptable. Rather, it is your behavioral choices. No one should be punished based solely on negative results of the flight. That doesn't mean that "no harm, no foul" is okay. If you run out of fuel and make an off-airport landing, you should not be treated more harshly than a pilot who runs out of fuel but, through happenstance, is able to glide to an airport. In both cases, though, it is important to identify and deal with the underlying behavior, or other root cause, that led to the fuel exhaustion.

Addressing Deviations: When a deviation occurs, an open and transparent exchange of information should follow. In other words, you must avoid hiding the mistake for fear of punishment. Instead, you should be able to identify the problem, learn from the mistake, implement fixes that can prevent a reoccurrence, and complete follow-up actions to validate effectiveness. Examples involve collaborating with an FAA Safety Inspector, communicating within a local club or advocacy group, or simply being honest with yourself after an occurrence.

Learn More

FAA's Compliance Program
faa.gov/about/initiatives/cp

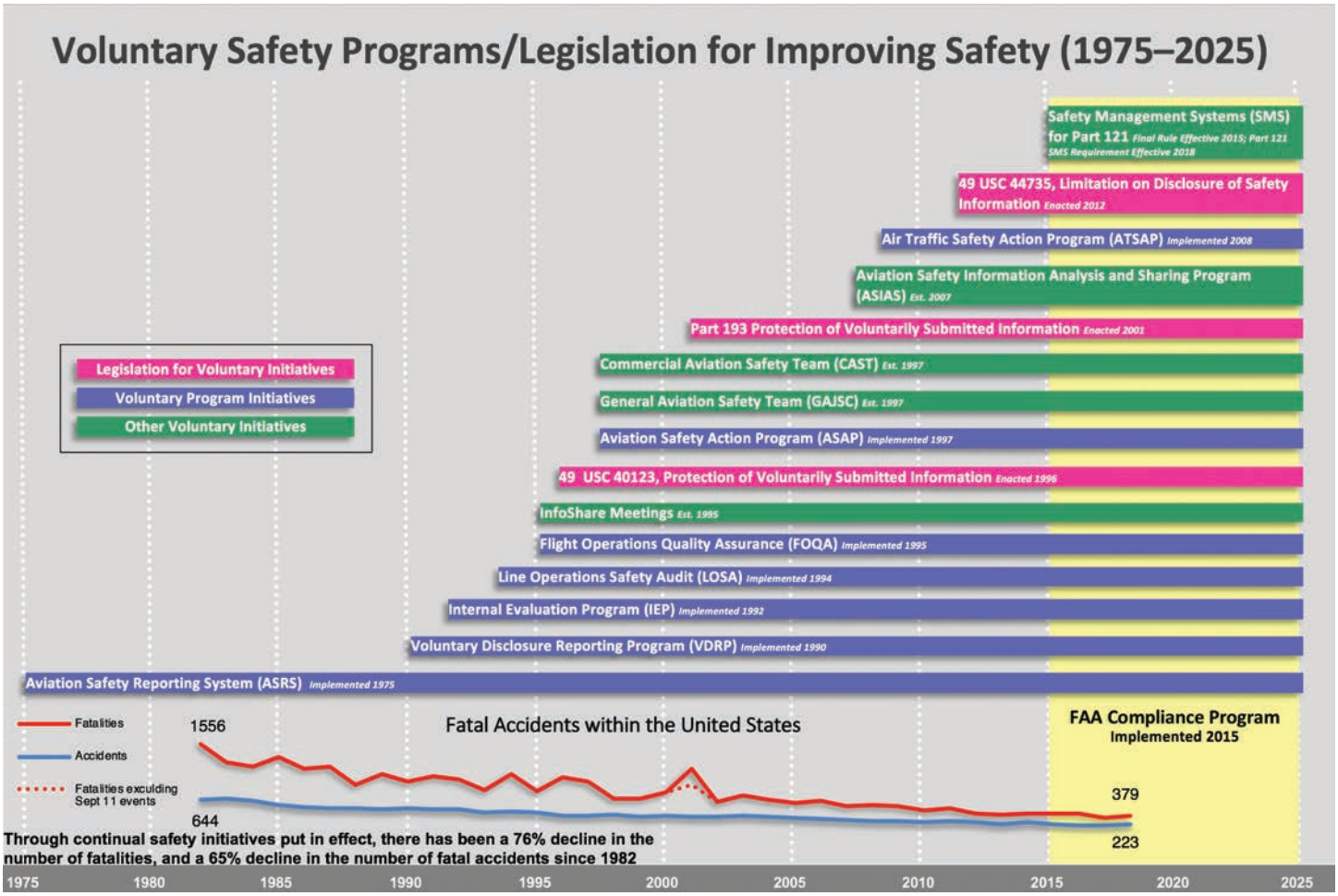


Figure 1

PARTY OF ONE?

How to Do a Safety Culture of Just You | *By Sabrina Woods*

Photo courtesy of Cody Mason, Lincoln FSDO ASI

Catastrophic failure of main landing gear assembly.

Have you heard? There is this relatively new concept called Safety Management System (SMS) that is sweeping manufacturers and regulators alike. It is rapidly becoming the gold standard throughout the aviation industry. Our National Airspace System (NAS) is remarkably robust, safe, and efficient, accommodating 5,000-plus operations at any given moment, in and around over 5.3 million domestic and 24 million oceanic square miles of airspace. But we can *always* do better. That is where SMS comes in. It is a proactive, systematic, top-down approach to managing safety within an organization. But understand that none of it works if there isn't a solid safety culture underpinning the effort.

Safety Culture Defined

"Safety Culture" is usually defined as a collection of beliefs, perceptions, and values that all employees share in relation to the risks that exist while conducting operations within an organization. It is what each person believes about the importance of safety and how he or she contributes in light of that belief. It is about understanding what risks are associated with the job, and what your responsibility is regarding that risk.

Safety culture, in and of itself, does not have a distinct classification. An organization can have a "bad" or "weak" safety culture just as readily as it can have a "good" or "strong" one. It is all about what the people believe and put into it that gives it its power. Many tragic accidents have occurred, in part, because of the lack of an effective safety culture. Chernobyl, the Challenger explosion, the Piper Alpha oil platform explosion, the Upper Big Branch coal mine disaster, and the Colgan Air Flight 3407 plane crash serve as just a few examples.

Complacency, poor decision making, workarounds, failing to follow procedures, ignoring trends, a reluctance to communicate concerns, and failing to respect human limitations are all hallmarks of a poor or weak safety culture. Each of the aforementioned accidents had these issues in spades and each resulted in horrible loss of life. The sad thing is that each disaster could have turned out vastly different, if not averted altogether, had there been a good safety culture in place.

Hallmarks of Good Safety Culture:

Commitment. First and foremost, a good safety culture is dead in the water unless there is a solid commitment to it. In the military, we had a saying about doing what is right, even when no one is looking. We use it to define integrity, but I think it works here as well. Building and sustaining a safety culture is not just about nodding along at the points that seem reasonable and make sense. It is about applying action to the words. It is also about staying committed to the task even when it might seem as though others have lowered their own vigilance. In aviation, it is about being concerned for the outcome of each flight and doing whatever is necessary to ensure everyone returns home safely every time.

Communication. You can always tell how well an organization is running by how it communicates within itself. Is communication effective — from those in charge, to the employees, and back again? Have the goals or mission of the organization been clearly delineated by those in charge? Do the people know that if they express a concern, it will be taken into account and addressed if needed? Someone once said that ideas are the currency of success. Safety culture needs a clear focus, constant ideas, assessments, and feedback to remain strong.

Teamwork. Safety works best if everyone involved feels like they are on the same team. No one likes it when they feel as though they have no say in what happens to them. Everyone — Big Boss to Worker Bee — has to be onboard and have buy-in for a safety culture to remain shipshape. All hands are on deck. That might have been a lot of nautical references, but you get the idea. If everyone on the team works toward the goal, everyone can benefit from the results. Plus, it takes a massive amount of energy to keep a good safety culture going. Not just one person can keep it up all the time. The load is lighter when it is shared.

Responsibility. With great safety comes great responsibility. Everyone in the organization has to have a sense of empowerment and accountability when it comes to identifying and managing risks. It just doesn't do anyone any good if people walk right by hazards, day in and day out, without anyone feeling as though they ought (or are allowed) to do anything about them.

In one real world example, a flight crew for a part 135 operation found a main landing gear bolt broken on their preflight inspection. They immediately reported it. A few weeks later, in the same operation but on a different aircraft, an aircraft mechanic found a bolt completely missing from a main landing gear. He reported it. A few months after that, an aircraft experienced a catastrophic failure after landing when ALL SEVEN BOLTS from a main wheel failed, causing the tire to deflate and the wheel to separate. Enough was enough. In a massive coordinated effort, the operator's principal airworthiness inspector, in conjunction with the aircraft certification office, researched, penned, and pushed a safety recommendation initiative to identify, uninstall, and recall all of the bad bolts. Not just on their own fleet — realizing that there were several other potentially affected Beech Jet 400s out there, they took it a step further. Because of the team's hard work and commitment to safety, they got *all* of the bad bolts out of the supply system and they did it in record time. Now there are several subsequent initiatives to make sure nothing like this happens from the manufacturer again. Spider-Man's Uncle Ben would be super proud. But seriously though, one responsible player in an effective safety culture could make the difference between a safe flight and a bad accident just waiting to happen.

Even if you mostly fly as a party of one (or maybe plus one if you fly with a friend/family member), you are part of a bigger, more dynamic whole. As such, you should want to build the best personal safety culture you can to continue flying safely.

Respect. Here is where I have to take a moment to put my human factors hat back on. If you've ever read any of my articles in past issues, you had to know it was coming. A safety culture is not anything unless there is healthy respect: Respect for the hazards and risks that are associated with doing business in the organization, and respect for the limitations of the human mind and body.

Photo courtesy of Cody Mason, Lincoln FSDO ASI

Broken Omega landing gear bolts.

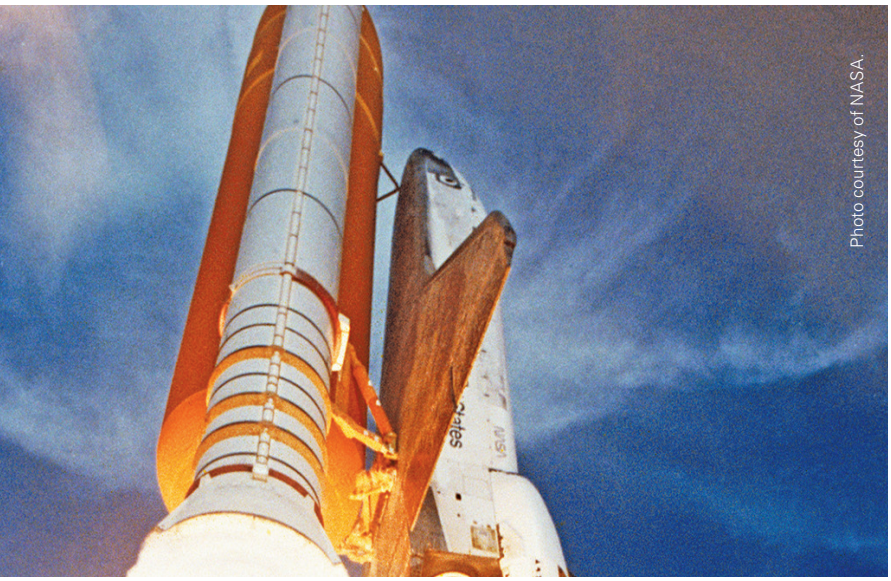


Photo courtesy of NASA.

The Challenger explosion is an example of an accident linked to an ineffective safety culture.

To reiterate what you likely already know, a hazard is anything with the potential to cause harm. In the previous example in the "responsibility" section, the hazard would be the bad bolts. A risk is the chance (low or high) that the hazard will actually cause harm. So the risk would be attempting to land on the bad bolts. If everyone in the organization doesn't have the same level of awareness and regard for all of the potential hazards and risks — if the flight crew, mechanic, and airworthiness inspector had blown off the busted bolts instead of doing something about them — it can leave a significant gap in the safety culture that an accident can slip through.

Last, never forget that we humans have just as much potential to be a hazard as those perilous parts do. In the Colgan Air Flight 3407 accident, inattention, distraction, and fatigue played significant roles in the pilots' failure to monitor airspeed. It resulted in their inability to diagnose an impending stall and apply appropriate corrective actions. This was likely not the first time the combination of these things happened in a cockpit. In an effective safety culture, we have to be mindful of what factors affect human performance and why. We can't just assign blame and move on because in the end, it fixes nothing and can foster a culture of fear and reluctance instead of safety. Achieving zero human errors is impossible, but mitigating the risks associated with human error is totally doable so long as there is continuous effort, improvement, feedback, and respect.

Just a Party of One?

By now you might be wondering, but what does this safety culture thing have to do with me? I'm just one person and hardly an 'organization.' Totally valid, but I have news for you. You ARE an organization! Even if you mostly fly as a party of one (or maybe plus one if you fly with a friend/family member), you are part of a bigger, more dynamic whole. As such, you should want to build the best personal safety culture you can to continue flying safely.

It really isn't *just* you, you know. Perhaps you rent your aircraft from the local FBO. That company is part of your safety organization. Or perhaps you own and have to rely on your trusty mechanic to keep your bird airworthy and flying high. He or she is part of your safety organization. Maybe you attend regular type club meetings, have a favorite flight instructor you use to keep up on the basics, or fly out of a towered airport and depend on air traffic controllers to keep you safe and separated. Every one of these people is part of your "organization of one," and therefore part of your safety culture.

How Do You Do Safety?

Since safety culture is a collection of beliefs, perceptions, and values — what do you believe? How do you think a safe operation should go, and how should everyone involved conduct themselves? If any one person in your organization — the FBO personnel, mechanic, flight instructor, or controller — doesn't put a high value on safety or do their due diligence in identifying and mitigating risks, the result can be disastrous for YOU.

Creating a strong culture is a matter of applying the good hallmarks in your mini organization. It is about staying engaged with all of the latest and greatest general aviation safety news. You are already on the right track just by picking up this magazine and reading through it! It is about chatting with your fellow aviators about experiences you have had and lessons you've learned. It is about "seeing" it and "saying" it and letting your FSDO know when something you encounter doesn't seem quite right. It's about taking advantage of every opportunity there is to better yourself as a pilot. It is about giving careful consideration to equipping the tools that heighten the level of safety for each flight (ADS-B Out anyone?) And lastly, it is about appreciating the fact that safety is hard work. It has to be nurtured and cultivated just like any living thing does.

Sabrina Woods is a guest writer for FAA Safety Briefing. *She is a human factors analyst with the FAA's Office of Accident Investigation and Prevention. She spent 12 years as an aircraft maintenance officer and an aviation mishap investigator in the Air Force.*

Checklist

SUSAN PARSON

Sowing Seeds for Safety

Colleagues and friends are familiar with my determined avoidance of anything that requires me to experience bugs, dirt, perspiration, or ugly shoes. Consequently, they might be a tad puzzled that I have chosen to focus this issue's Checklist column on an FAASafety Team brochure developed for — ready for it? — aviation agricultural operators. But I have a good reason. So, climb aboard as I plow ahead with the explanation and smooth a few furrowed brows.

Cultivating the Culture

The title of the brochure is "A Positive Safety Culture: A Guide for Aviation Agricultural Operators." (See "Learn More" for a link.) I stumbled across it while researching safety culture material that meets this column's mission. My first inclination was to dismiss it as irrelevant to this audience. But it's a short and easy read, so I decided to glance over it before I moved to more fertile fields of inquiry.

By the time I had finished, I knew I had been mistaken in deeming it immaterial. Advice directed to "operators" and "companies" might be less pertinent to individual pilots or mechanics, but most of the brochure's concepts and recommendations are applicable to anyone seeking to establish a positive safety culture. Here's a slightly whimsical summary:

Safety Policy: Pick What to Plant

I don't pretend to be an expert in agriculture, but the farmers in my family did teach me that crops — at least the ones you want — don't exactly crop up by accident. The farmer starts with a desire and commitment to plant a specific thing, like tomatoes.

In aviation, a positive safety culture begins with a desire for, and a commitment to safety excellence. Just as a farmer can't assume that tomatoes will just grow, pilots and mechanics can't assume safety will just happen. Safety-minded companies usually develop a written safety policy statement. An individual airman can start by developing written personal minimums. For tips on this process, follow the link in "Learn More."

Safety Risk Management: Weed It and Water It

Weeding my father's vegetable garden was hardly my favorite childhood chore, but I knew that if I wanted to savor the succulent taste of his tomatoes, I had to help tend them. I was always amazed by how quickly those evil weeds could take over if we neglected the job.

It's the same in aviation. Like weeds, safety hazards pop up everywhere. They can quickly choke the "real" crop — safety — if we don't constantly monitor and eradicate them. As in agriculture, we can also use proactive means (aerial application, anyone?) to prevent some of those weeds from sprouting in the first place.

Another part of safety risk management is akin to watering those lovingly planted crops. Things change quickly in the highly dynamic world of aviation, and your personal safety culture can wither if you don't water it with regular infusions of fresh knowledge and training.

Safety Assurance: Measure to Manage

My Wisconsin-based beau has schooled me in sayings common to America's Dairyland. For instance, as we traveled to Oshkosh last summer, I learned that farmers look for their field corn to be "knee high by the fourth of July."

You can think of that little rhyme as a form of safety assurance, which involves tracking and evaluating performance against a known standard. A good practice is to conclude every flight by honestly assessing your performance against the metrics in the applicable Airman Certification Standards. Don't tolerate deviations; remember that it's easier to uproot both weeds and bad habits while they are small.

Safety Promotion: Share the Wealth

My dad took great pleasure in sharing the bounty of his harvest, and we pilots can do the same. Safety promotion starts with setting the best possible example. As you gain knowledge and experience, you can also contribute to safety promotion by mentoring your fellow pilots or mechanics.

Learn More

Creating a Positive Safety Culture
go.usa.gov/xmN2Y

The Four SMS Components
faa.gov/about/initiatives/sms/explained/components

"Your Safety Reserve," *FAA Safety Briefing* – Mar/Apr 2015, page 30
go.usa.gov/xmN2R

Engaging the Aviation Community

Top 5 Ways the FAASTeam Can Help Improve GA Safety Culture

By Tom Hoffmann

Research shows that pilots benefit when they feel like they are part of a group or family. Safety records of airmen that belong to type clubs or aviation associations suggest that these pilots are less likely to have an accident than their non-member colleagues. Less measurable but equally vital is the strong sense of community and camaraderie that comes with being in the company of like-minded aviators. It becomes a safe haven to ask a question, bounce off an idea, or to just share your latest, "There I was ... " story to eager ears. More importantly, it becomes the ideal environment for safety attitudes to develop and an aviation safety culture to flourish.

Despite their benefits, not all type clubs or aviation organizations are the right fit for some pilots. It could also simply be that geography or finances are limiting factors in your ability to join forces with your fellow airmen. If either is the case, don't despair. The FAA Safety Team (FAASTeam) has you covered — in all 50 states, *gratis*! You are also covered for whatever you might fly — from an Agusta-Bell 47 *Ranger* to a Zenith *Zodiac*.

For nearly 50 years, the FAASTeam, including its previous formats, has been building a multi-faceted safety community that is highly regarded worldwide. Its mission statement says it all: *Improve the nation's aviation accident rate by conveying safety principles and practices through training, outreach, and education while establishing partnerships and encouraging the continual growth of a positive safety culture within the aviation community.*

Notice that last part on safety culture. But how exactly does the FAASTeam promote and improve safety culture for participants? The following are five distinctive elements that help define the FAASTeam's role in the aviation community and make them ideally situated to positively impact safety culture.

1. WINGS and AMT Awards Program

The WINGS Pilot Proficiency Program and AMT Awards Program are undoubtedly the flagship elements of the FAASTeam. Both programs help inspire professionalism, proficiency, and continuing education for pilots and mechanics. By encouraging and incentivizing training and learning activities in specifically targeted areas of emphasis, the programs are able to focus on top accident causal factors in hopes of reducing their occurrence.

The WINGS program awards eligible pilots with a basic, master, or advanced phase of WINGS based on completion of a specific set of knowledge topics and flight activities. As an added bonus, you can satisfy the requirement for a flight review by simply completing any phase of WINGS. For more details on the program, see Advisory Circular (AC) 61-91J at go.usa.gov/xmfGB.

The AMT Awards program issues a bronze, silver, or gold phase to eligible AMTs that meet a minimum requirement of training hours and coursework. The program is designed to also encourage and reward employers who take proactive roles in training their technical workforce. See AC 65-25F at go.usa.gov/xmQFA for more details.

2. Seminars and Webinars

Educational outreach is the cornerstone of the FAASTeam's efforts to improve safety, its primary tool of trade being the familiar seminar/webinar. Whether you're trying to achieve a WINGS or AMT

Awards phase, or just shore up your knowledge on a particular aeronautical subject, FAASTeam seminars and webinars can be a great asset to any airman. Last year alone, the FAASTeam conducted more than 4,200 approved safety seminars and more than 260 webinars that reached about 180,000 members of the aviation community.

According to Louisville FAASTeam Program Manager (FPM) and Airworthiness Aviation Safety Inspector Chuck Holsclaw, the seminars are also a chance for the FPMs and FAASTeam volunteer representatives (or Reps) to interact directly with pilots and mechanics on both local and national issues. "I help to educate, promote, and instill a positive safety culture by writing presentations directly related to these safety issues, providing that information through those presentations, and encouraging open discussions with local individual airmen, groups, and organizations," says Holsclaw.

3. FAASafety.gov and Online Resources

FAASafety.gov is the FAASTeam's online hub for airman education and premier safety resource. The site provides important GA-related updates and notices, lists airman activities and seminars in your local area, and hosts hundreds of online aviation safety courses. The site currently has more than 930,000 account users and in the last year topped 1.6 million course completions!

In addition, FAASafety.gov hosts the email messaging system that can rapidly issue ad hoc nationwide safety updates as well as deliver localized seminar notices. It's also the home base of the WINGS and AMT Awards programs mentioned earlier.

If you're a user of social media, you've probably noticed a few other FAASTeam online safety resources that play an important role in promoting safety culture. For starters is the new Facebook GA Safety Group that was created last August. The group provides a constructive online forum for you to share thoughts, ideas, and questions when it comes to aviation safety. We recently hit the 10,000-user mark, more than 80-percent of which are active users. Go to facebook.com/groups/GASafety to sign up.

At the very core of the FAASTeam's success is a stalwart staff of over 100 FPMs and 2,500 FAASTeam Reps spread across the nation.

If micro-blogging is more your style, then be sure to check out @FAASafetyBrief on Twitter. We regularly post important safety news, regulatory updates, and aviation event details, as well as share user and industry content relevant to GA. Thanks to you, we have a community of nearly 60,000 followers.

Other aviation-related social media avenues include FAA's Facebook, Twitter, Instagram, LinkedIn, and YouTube channels. Collectively, these mediums enhance our ability to be a more active member of the GA community and help us gather important feedback from airmen like you.

4. FPMs and Reps Local expertise

At the very core of the FAASTeam's success is a stalwart staff of over 100 FPMs and 2,500 Reps spread across the nation. They do everything from gleaning

We asked FAASTeam members nationwide to describe what constitutes an effective safety culture. Here are the words that rose to the top.

Photo courtesy of Heather Metzler

"Dinner with ATC" – pilots gather for a meal at the Little Rock Air Traffic Control/Runway Safety Action Team Forum in May 2018. These FAASTeam organized events offer pilots a unique opportunity to interact with local controllers.

useful information from accident data, to coordinating runway safety forums, to pressing the flesh with neighborhood pilots and mechanics. To get a sense of how dedicated these individuals are to furthering the cause of GA safety, I asked a few to comment on how they help foster and maintain a positive safety culture in their local areas.

"I strive to identify hazards and make contact with aviation personnel who are potentially at risk in order to seek ideas, actions, and solutions that will reduce the potential of harmful accidents and incidents. By raising awareness of these issues, I believe the FAASTeam helps focus users on aviation safety, thus influencing their values, traits, and practices."

– Harlow Voorhees, Oakland

"Openness, sharing personal experiences, and placing emphasis on aviation safety during my interactions."

– Richard Henry, Birmingham

"We establish and participate in workgroups such as the Arizona Flight Training Workgroup, which gathers flight school representatives and individual flight instructors together to discuss and explore local safety solutions. We also assemble flight schools, tenants, and air traffic management into quarterly workgroups at high-activity airports. When we get people together from different organizations, lines of business, and positions, they realize that they ultimately share the same interest — safe operations."

– Tina Buskirk and Ernie Copeland, Scottsdale

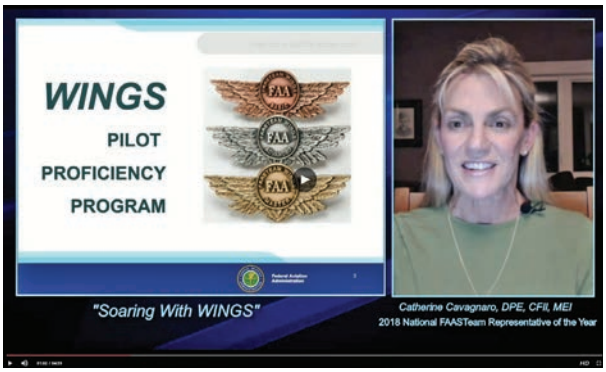
"By visiting the airman on a regular basis and holding events not only generated by our own research, but by local need, we gain interest in the program and therefore can now expose the airman to the solutions to a safer flying community."

– Eddie Shields, Charlotte

"Lead by example! I fly a Cessna 195B tail dragger, radial engine aircraft, and I am noticed and known wherever I go. I must practice what I preach or risk destroying the very culture I strive to build."

– Larry C. Wells, Jackson

FPMs are also integrally involved with administering the FAA's remedial training program designed to address safety issues associated with a regulatory (or in some cases non-regulatory) safety deviation. "We have had six pilots who were recommended for remedial training in 2018 in our FSDO," says FPM John Carter in Bradley, Conn. "All of the pilots have



Want to learn more about the WINGS Program? Check out FAASTeam Rep Cathy Cavagnaro's new video on "Soaring with WINGS." FAASTeamTV.com/WINGS

successfully completed their training and are now active WINGS participants."

Carter went on to emphasize that all of the pilots are doing well and none have had repeat incidents of non-compliance. "This program [has] helped turn mistakes into a positive teaching opportunity," Carter continued, "and has helped our local flying community with establishing an effective and 'just' safety culture."

5. Hangar Flying

Finally, a benefit of FAASTeam participation that is often overlooked, but still extremely valuable to a positive safety culture, is the organization's innate ability to foster a fellowship among airmen. Besides being excellent educational opportunities, FAASTeam seminars and events can also offer a chance to network with fellow airmen and industry members, and in some cases, be a catalyst for forging new friendships. Sometimes it's those casual "coffee pot" conversations with colleagues that can spark a moment of clarity, answer a burning question, dispel a rumor, or inspire an impromptu mentoring (or mentee) moment. This is especially salient given how often a pilot can sometimes go without any interaction with the aviation community, barring the flight review of course. So, the next time you see a seminar or forum offered in your local area, don't let the topic be the sole driver of whether or not you attend. Consider the value of the camaraderie and company you'll share too.

As you can observe with these examples, the FAASTeam is definitely well positioned and firmly committed to influencing safety culture in the GA community. To this team of dedicated aviation professionals, safety culture is not just about promoting policies or programs, or acknowledging achievements and accolades; instead, it's something woven into the organization's very fabric and an intrinsic part of who they are and what they do. That's a culture you can count on.

Photo courtesy of Heather Metzler

FPMs Keith Frazier and Brandon Guillot help educate pilots about first responder actions during an aircraft accident at a FAASTeam event in Arkansas.

National FAASTeam manager Valerie Palazzolo helps answer airmen questions in the FAA Safety Center at Sun 'n Fun 2019.

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

Learn More

FAA Safety Team Website
www.FAASafety.gov

DARWIN VS. LAMARCK

The Evolution of Safety Culture

By James Williams

Most people probably know who Charles Darwin is, but I suspect most have never heard of Jean-Baptiste Lamarck. Allow me to make introductions. Before the Darwinian theory of evolution through natural selection, there was Lamarckian evolution. Part of Lamarck's theory was the idea of use and disuse to explain how species changed over time.

The classic example of this idea is the giraffe's long neck. In Lamarck's world view, the proto-giraffe strained to reach leaves high on the acacia tree that other animals couldn't reach. This repeated strain and stretching would lead to a lengthening of the proto-giraffe's neck. That proto-giraffe would pass that added length on to its offspring. The result, over generations, would be the long neck of modern giraffes.

Supporting this theory, at the time, was the fact that both humans and giraffes have only seven neck vertebrae. In fact, the vast majority of mammals have the same number of neck vertebrae with the notable exception of manatees and sloths. As it turns out, Lamarck was right about the motivation but wrong about the mechanism. Darwin would later posit his theory of natural selection, that change in species occurs through differential success in reproduction. The change is driven by genetic material rather than traits acquired during life. Gregor Mendel would more or less confirm this later with his work on heredity/genetics.

So does that relegate Lamarck to the backwater of a trivia answer you may never use? In fact, his work is worth remembering because it is foundational to a lot of evolutionary thinking. Albeit with the wrong mechanism, Lamarck basically invented the concept of evolution. No one had previously offered a cohesive theory.

It seems to me that pilots should remember Lamarck because he was *very* right about a different kind of evolution, one that's absolutely critical to humans — cultural evolution.

Cultural evolution, as it turns out, is Lamarckian. Our acquired experience and knowledge can be passed along. The Lamarckian process allows for rapid and, more importantly, directed change. We can actively improve ourselves and our communities. Building a safety culture might seem like a herculean task, but it isn't one you'll be doing by yourself or from scratch. It's also not a process with a definitive end. Like natural evolution, it's a process of continuous change. We can harness that change and drive it to a better outcome. Here are a few ways to do that.

Community

Just as a species requires a population, a culture requires a community. You need a community with good diversity because that gives you the widest possible view of an issue. You are leveraging other people's experience and expertise to improve your own. A type club offers an excellent way of finding such a community. A type club, particularly a large/national one, gives you great diversity of experience. But even smaller type clubs can have great benefits.

"Type clubs offer great camaraderie that leads to great safety benefits," explains Kyle Ludwick, the Experimental Aircraft Association's (EAA) Manager of Partnership Development. "People think it's mainly a social thing, but you also learn about your airplane. It's a great place to share best practices, what to do, what not to do, and how to properly own, fly, and maintain your airplane."

If you've never been involved in a type club, go out and attend a fly-in," Ludwick says. "Most type clubs are very welcoming even if you're not a member." He continues, "You're going to learn a ton. These fly-ins have become great training opportunities."

EAA has two new guides that are designed to help smaller type clubs create safety benefits enjoyed by their larger cousins. First is the *Type Transition Guide*, which aims to create a template for a training guide for aircraft types that don't have one. Next is the *How to Start a Type Club Guide*. This guide is intended to start a new, or revitalize a dormant, type club based on the best practices derived from the Type Club Coalition, a consortium of nearly 20 agencies and type clubs formed in 2015. The goal is to develop strong communities around as many types as possible. Strong communities can have a tremendous impact on safety.

Structure

Good cultures need a structure or framework. An interesting place to start is the Aircraft Owners and Pilots Association (AOPA) Air Safety Institute Scalable Safety Framework (SSF). The SSF solves a fundamental challenge of Safety Management Systems (SMS) — scale.

SMS is a great tool for driving safety improvement, but smaller operators may perceive it as overkill. The SSF boils SMS down to its core concepts and provides a more flexible solution. It is intended for tailoring to fit your situation rather than to meet

regulatory requirements. The core areas are: Safety Commitment, Definition of Roles and Responsibilities, Risk/Hazard Identification, Safety Reporting, and Culture. How you approach these areas will depend on whether you are working in a small group or a large one.

"The major benefit of the SSF is improving GA's safety culture. Allowing pilots and organizations to think through the risks and hazards associated with GA flying brings safety to the forefront of the conversation," explains Robert Geske, Manager of Safety Analysis for the AOPA Air Safety Institute. "The program is designed to have a positive impact on GA's safety culture by: 1) encouraging more safety reporting, and 2) providing flying groups with a scalable framework to create a customized safety reporting system that has a meaningful impact on those that use it, whether they have two pilots, or two hundred." Geske continues, "Getting buy-in from pilots, mechanics, dispatchers, and organization leadership is much easier when they are involved in customizing the program to meet their specific safety goals."

According to Geske, the response has been very positive. "Since its release in March this year, the material has been downloaded more than 200 times," he says. The AOPA Air Safety Institute (ASI) has developed an interactive presentation that guides groups or individuals through the steps necessary to create a functioning safety program. "So far we've heard from several flying groups that the SSF is a valuable tool that fills a previous gap in safety reporting. The SSF PowerPoint presentation, which is included in the downloadable program, can be

AOPA Air Safety Institute's Scalable Safety Framework provides a good structure for safety culture.

delivered by an ASI or conducted independently by flying groups."

Codes of Conduct

Codes hold an important place in culture. Professional codes fill the space above the legal minimums of regulations and address an ethical component that regulations might not have addressed or emphasized. Professional codes of conduct are also designed, implemented, and enforced by your peers, who can sometimes be more influential than authorities. Codes can be a form of positive peer pressure to help you up your game in terms of safety. Another great thing about codes is that they can be more flexible than a regulation or rule, which means they can be continuously updated to meet any new challenge. Another benefit is that you don't have to be in a group to use a code of conduct; they're scalable to individual use.

A great place to start in that regard is the Aviators Code Initiative (ACI). The ACI is a nonprofit dedicated to creating and advancing innovative aviation safety tools. The primary focus is on aviation codes of conduct. ACI has codes for a variety of pilot certification levels and aviation professionals including AMTs, flight instructors, UAS pilots, helicopter pilots, light-sport pilots, student pilots, and more. These codes of conduct are flexible and, much like the SSF, intended to be adapted by the person or organization using them.

The launching point for this initiative was the Aviator's Model Code of Conduct (AMCC). The AMCC was designed to distill expertise and experience of experts from across aviation into something that could benefit anyone involved in aviation, hence the efforts to expand to as many subgroups as possible. The AMCC was also designed to be a model, meaning that it is more of a template than a prescription. It is designed to work in concert with concepts like best practices from type clubs and the SSF.

"We still need data on uptake in the operational world, but the level of interest from institutions seems to have increased a lot," explains Bill Rhodes, Ph.D., member of the ACI Permanent Editorial Board. "At the moment, status quo is probably a safe bet for the AMCC, but other areas like UAS are changing with some urgency as the technology is rapidly changing."

"The latest proposals are not so much about conduct, of course, as they are about technology," says Rhodes. As an example, Michael Baum, J.D., M.B.A., Airline Transport-rated pilot, and ACI Permanent Editorial Board Member noted that, "the development of Urban Air Mobility (UAM) merges people and UAS and presents important ethical precepts to which we will continue to respond."

Change is Good

Any theory of evolution is ultimately about change. While we sometimes fear and struggle with change, it can be a powerful benefit in cultural evolution. By combining the wisdom of a strong community with the structure of a system like the SSF, along with the ethos of the AMCC, you have a strong basis for a good safety culture. But that's just a starting point. The key to a robust safety culture is constant evolution.

The examples cited here are one basis, but not the only one. Nature shows us that more than one approach can often converge on a solution to a problem. The important thing is to constantly ask yourself how you build your safety culture, and what you can do to keep its evolution going.

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

Learn More

"Kaleidoscope Community," *FAA Safety Briefing* – Sep/Oct 2018
go.usa.gov/xmvSK

Type Club Coalition's Type Transition Guide
bit.ly/2wjbFRj

Aviator's Code Initiative
www.secureav.com

AOPA ASI Scalable Safety Framework
bit.ly/2JTNUau

BREAK A RULE? SEE A SAFETY ISSUE?

FILE A NASA REPORT – IT'S YOUR TICKET TO SAFETY

BY JENNIFER CARON

It was early morning. The canopy of hazy weather and low clouds produced a steady drizzle of rain on the windshield of our cockpit as we waited for taxi instructions. We acknowledged the clearance to hold short of Runway 19R, and moved onto the taxiway. I looked over at my flying buddy and said, "Hey, can you see the ground markings at this airport? I know the surface is wet, but the markings are just too faded to see them clearly."

Neither of us saw the hold short line as we slowly crossed over it. Quickly realizing our mistake, we braked. But it was too late to stop before entering the runway. Luckily, our story ended without harm to human or machine. But we just committed a runway incursion. It was clearly unintentional, but being human, we were worried about getting into trouble with the FAA. We also knew those faded ground markings were a safety issue that should be reported to keep other pilots from finding themselves, as we did, on the wrong side of the hold short line. What could we do?

Drum roll, please: We could (and did) file a NASA Report.

What is a NASA Report?

Commonly known to pilots and air traffic controllers as the "NASA Report," its official name is the NASA Aviation Safety Reporting System (ASRS).

ASRS is a voluntary safety reporting program funded by the FAA and administered by the National Aeronautics and Space Administration (NASA). It is a valuable tool in the safety culture toolbox for all users in the National Airspace System (NAS) as a way to report hazards and safety concerns. Even before the FAA Compliance Program began in its current form, ASRS also gave users a way to report mistakes without fear of punishment.

The popular "NASA Report" moniker arises from the fact that NASA, not the FAA, collects, analyzes, and responds to voluntarily submitted aviation safety incident reports and keeps them confidential. Confidentiality was essential to getting participation and, since NASA does not have enforcement authority, it became the program administrator.

ASRS welcomes all users to report any safety issue, especially information that could prevent an accident.

Let's say you unintentionally violated an airspace rule and you want to protect yourself from enforcement. Under the Compliance Program, the FAA is concerned not about passing out sanctions but rather with understanding why the violation happened and how to prevent it from happening again. If you are still nervous about 'fessing up, filing an ASRS report offers a waiver of disciplinary action. Stay tuned for more about the waiver program.

First, though, let's talk about the other benefits that ASRS provides. Its significance arises from its role as a living directory of invaluable information on all types of aviation safety data. It's free, it's confidential, and the database is available to the general public online. The key ingredient to its success though is hearing from airmen like you.

See Something, Say Something

ASRS welcomes all users to report any safety issue, especially information that could prevent an accident. From GA pilots, to controllers, to mechanics, anyone who uses the NAS can report any type of issue involving the safety of aviation operations. You can file a report about the faded ground markings at an airport, let them know about your airport drone sighting, or send in your reports about the wake encounter you experienced with another aircraft.

Contrary to popular belief — there is no limit to the number of reports you can submit. Report as many times as you need, as often as you need. It's not just the pilot-in-command's perspective. Whether you are in the left seat, the right seat or the rear seat, the ASRS wants to know about it if you see a safety issue.

"We want to hear all safety concerns," says Dr. Becky L. Hooey, Director of the NASA ASRS program at NASA's Ames Research Center in Silicon Valley. "By submitting a report to ASRS, you can share your stories and lessons learned with the aviation community so that others don't experience the same problem."

Maybe you've experienced a signage issue or some confusing phraseology. These issues are not rule violations, and you don't need a waiver for protection, but it is a valid safety concern. ASRS is the place to report it. "The bottom line — if you think someone else can learn from it — file a report. You may just save someone's life," says Hooey.

Your Voice Is Heard

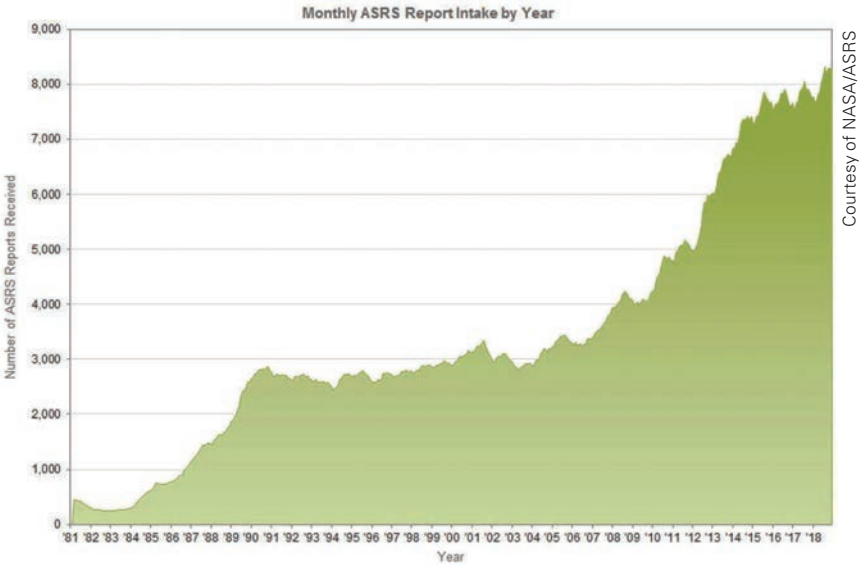
ASRS receives over 100,000 safety reports a year. The lion's share of these come from air carriers. ASRS receives only approximately 16,000 annual safety reports from the GA community. ***We can do better!*** It's not uncommon for GA pilots, mechanics, flight instructors, and side-seat enthusiasts to see or experience some type of safety concern that needs to be reported. Speak up, let your voice be heard and file a report at asrs.arc.nasa.gov.

Your valuable reporting carries weight, and you can be assured that it is taken seriously. "Human eyeballs review every single report that we receive at ASRS," explains Hooey. A minimum of two expert aviation analysts review your report to classify the aviation hazard, de-identify the report, and flag critical safety information for immediate action.

Confidentiality is a given. NASA completely removes names, N-numbers, dates, times, and anything that could identify those involved. ASRS keeps your de-identified report in its database so that others can learn from you and so that the data collected can improve safety for everyone in the NAS. When ASRS receives a high priority/safety critical report, an alerting message goes to the appropriate FAA office or aviation authority to address the safety concern. While the FAA gets the details of the incident, the agency knows nothing about you.

Your Information Directly Helps Your Fellow Aviator

Anyone can access the ASRS database online; visit asrs.arc.nasa.gov. Aviation safety researchers, the NTSB, GA advocate organizations such as AOPA,



Courtesy of NASA/ASRS

The ASRS safety report intake has grown at an enormous rate. ASRS receives over 100,000 safety reports per year.

aircraft manufacturers, and others use this information to improve safety and training.

"We have used ASRS reports to look at a variety of different safety issues," says Dr. Kim Cardosi, Principal Technical Advisor in Aviation Human Factors at the U.S. Department of Transportation's Volpe Center. "Two important areas were runway incursions and incidents involving UAS (drones)." In each case, Dr. Cardosi and her team of researchers accessed the ASRS database to look at human factors issues, at the request of the FAA, to determine why these incidents were happening and what the agency could do about them.

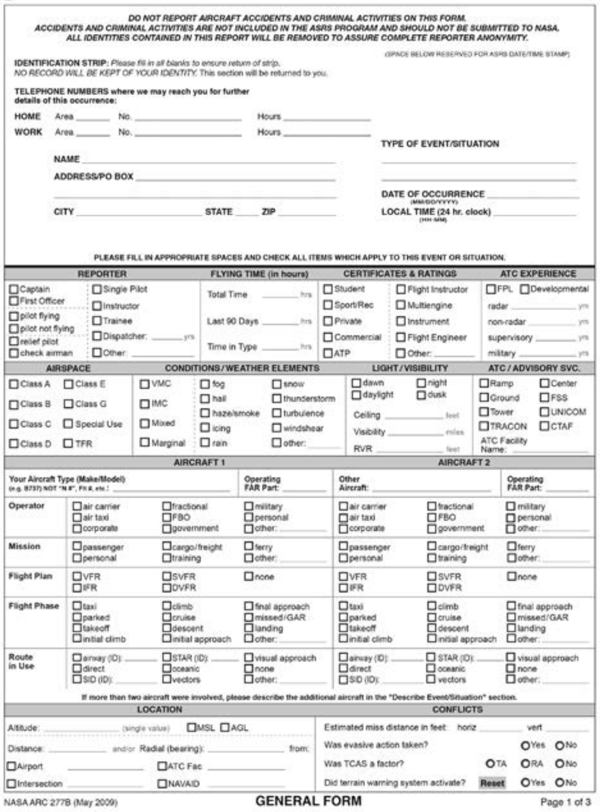
"After studying the safety reports in ASRS, we found some interesting insights into the nature of problems reported with UAS activity. For example, there are differences between how the pilot of a manned aircraft interacts with air traffic versus how the operator of a large UAS does," says Cardosi. "When a controller instructs a manned aircraft to do something, 99 times out of 100 they just do it. But UAS operators are often on a pre-programmed flight plan so they can't always do what the controller wants them to do. As the reports described, sometimes the UAS operators didn't even understand the phraseology that the controllers were using. This pointed to changes in training that were needed for both the UAS operators who communicate with air traffic and the controllers themselves. With small UAS, operators were flying their drones too close to an airport and interfering with manned aircraft operations. In other reports, controllers also pointed to specific information that they needed for every UAS flight in their airspace. The analysis of reports submitted to ASRS provided a roadmap for things that needed to change to ensure successful integration of UAS operations into the NAS," explains Cardosi.

Here's another example. "Until we studied the ASRS data, we had no idea why the most common type of runway incursion was occurring. In these events, pilots correctly read back the instruction to hold short of a runway, but then they would cross the hold short line (without getting onto the runway)," says Cardosi. Thanks to the voluntary input of pilots sharing their stories through ASRS, Cardosi concluded that the majority of these incursion incidents occurred because pilots were involved in heads-down tasks, such as reviewing the checklist or programming the flight management computer. These findings were shared at runway safety conferences and pilots were cautioned not to conduct heads-down tasks close to a runway. "In addition, the markings that lead up to the hold short lines were enhanced on a national scale, to give pilots an additional indication that they were approaching the hold short lines," says Cardosi.

ASRS receives over 100,000 safety reports a year, most of which are from air carriers. Only approximately 16,000 annual safety reports come in from the GA community. *We can do better!*

"ASRS is critical to our research, because in order to fix or prevent a problem, you first have to understand why it happened," concludes Cardosi.

The General Aviation Joint Steering Committee (GAJSC), the Commercial Aviation Safety Team, and others also use ASRS data to discover and resolve safety issues, such as when the GAJSC conducted a study of controlled flight into terrain (CFIT). The GAJSC team used ASRS reports of events similar to CFIT, which did not result in an accident, to identify factors that kept the pilot and flightcrew from impacting terrain. This way, the study team learned what technologies, flight skills, or other factors could be promoted to prevent CFIT accidents in the future.



DO NOT REPORT AIRCRAFT ACCIDENTS AND CRIMINAL ACTIVITIES ON THIS FORM.
ACCIDENTS AND CRIMINAL ACTIVITIES ARE NOT INCLUDED IN THE ASRS PROGRAM AND SHOULD NOT BE SUBMITTED TO NASA.
ALL IDENTITIES CONTAINED IN THIS REPORT WILL BE REMOVED TO ASSURE COMPLETE REPORTER ANONYMITY.

(SPACE BELOW RESERVED FOR ASRS DATE/TIME STAMP)

IDENTIFICATION STRIP: *Please fill in all blanks to ensure return of strip.*
NO RECORD WILL BE KEPT OF YOUR IDENTITY. This section will be returned to you.

TELEPHONE NUMBERS where we may reach you for further details of this occurrence:

HOME Area ____ No. ____ Hours ____
WORK Area ____ No. ____ Hours ____

NAME ____
ADDRESS/PO BOX ____
CITY ____ STATE ____ ZIP ____

TYPE OF EVENT/SITUATION ____
DATE OF OCCURRENCE (MM/DD/YYYY) ____
LOCAL TIME (24 hr. clock) (HH:MM) ____

PLEASE FILL IN APPROPRIATE SPACES AND CHECK ALL ITEMS WHICH APPLY TO THIS EVENT OR SITUATION.

REPORTER: Captain, First Officer, pilot flying, pilot not flying, relief pilot, check airman, Single Pilot, Instructor, Trainee, Dispatcher: ____ yrs, Other: ____
FLYING TIME (in hours): Total Time ____ hrs, Last 90 Days ____ hrs, Time in Type ____ hrs
CERTIFICATES & RATINGS: Student, Sport/Rec, Private, Commercial, ATP, Flight Instructor, Multiengine, Instrument, Flight Engineer, Other: ____
ATC EXPERIENCE: FPL, Developmental, radar ____ yrs, non-radar ____ yrs, supervisory ____ yrs, military ____ yrs

AIRSPACE: Class A, Class E, Class B, Class G, Class C, Special Use, Class D, TFR
CONDITIONS / WEATHER ELEMENTS: VMC, IMC, Mixed, Marginal, fog, hail, haze/smoke, icing, rain, snow, thunderstorm, turbulence, windshear, other: ____
LIGHT / VISIBILITY: dawn, daylight, night, dusk, Ceiling ____ feet, Visibility ____ miles, RVR ____ feet
ATC / ADVISORY SVC.: Ramp, Ground, Tower, TRACON, Center, FSS, UNICOM, CTAF, ATC Facility Name: ____

AIRCRAFT 1 / AIRCRAFT 2
Your Aircraft Type (Make/Model) (e.g. B737) NOT "N #", Flt #, etc.: ____ Operating FAR Part: ____ | Other Aircraft: ____ Operating FAR Part: ____
Operator: air carrier, air taxi, corporate, fractional, FBO, government, military, personal, other: ____
Mission: passenger, personal, cargo/freight, training, ferry, other: ____
Flight Plan: VFR, IFR, SVFR, DVFR, none
Flight Phase: taxi, parked, takeoff, initial climb, climb, cruise, descent, initial approach, final approach, missed/GAR, landing, other: ____
Route in Use: airway (ID): ____, direct, SID (ID): ____, STAR (ID): ____, oceanic, vectors, visual approach, none, other: ____

If more than two aircraft were involved, please describe the additional aircraft in the "Describe Event/Situation" section.

LOCATION: Altitude: ____ (single value) MSL, AGL; Distance: ____ and/or Radial (bearing): ____ from: ; Airport ____; ATC Fac ____; Intersection ____; NAVAID ____
CONFLICTS: Estimated miss distance in feet: horiz ____ vert ____; Was evasive action taken? Yes No; Was TCAS a factor? TA RA No; Did terrain warning system activate? Reset Yes No

NASA ARC 277B (May 2009) GENERAL FORM Page 1 of 3

ASRS Needs More GA Reports

"We need additional information from the GA community on wake turbulence encounters," explains Jillian Cheng, Wake Turbulence R&D Program Manager in the FAA's NextGen organization. Currently, ASRS is collecting de-identified, confidential data to support the FAA's wake turbulence study. This ongoing effort aims to document contributing factors, identify hot spots, and determine baseline separation metrics to avoid wake encounters using relative risk assessments.

"Whenever we have new wake separation standards, NASA sends weekly ASRS reports so we can get a baseline understanding of our current separation standards," explains Cheng.

"It is critically important that we hear from GA pilots," says Chris Lawler of Cavan Solutions, who is currently working with Cheng on the wake turbulence study. "Tell us about your wake encounters and provide as much detail as possible. Let us know your perceived bank angle, pitch, details on the preceding aircraft, weather conditions, whether your auto-pilot disconnected, etc. All these details are extremely important for us," explains both Lawler and Cheng.

Safety researchers also use your stories to develop the bigger picture about the safety issues. As Bill Kaliardos, Human Factors Integration Lead in the FAA's NextGen organization explains, "Safety analysts can look at ASRS trends, and when they see signs of a systemic issue, they can look deeper and apply the appropriate mitigations to fix the problem before it becomes an incident or accident. The crowd-sourced and voluntary data that ASRS provides means that we can get safety information that we might not otherwise know about. It's a critically important part of our safety tools."

It's So Much More

If you want a glimpse (or more) of ASRS value, take a look at NASA's *Callback* newsletter (asrs.arc.nasa.gov) and be sure to subscribe. Then do your part. By sharing things you see or do, you may just save someone else's life.

ASRS Waiver Program

No, I didn't forget this part! If you unintentionally committed, *or think* you committed, a rule violation, fill out an ASRS report online, or download a paper copy and mail it in. **You must file a report within 10 days of the violation or event in order to receive the protections of the program.** Include your name, address, phone number, and a detailed description of what happened. NASA needs your contact details to send you an ID Strip. The ID Strip is your proof of submission; it's what you need to present to the FAA for the waiver. NASA does not keep a copy of the ID Strip. The information you provide is not used against you; however, you cannot use the protections for an accident or a criminal act. To be eligible for the waiver of sanctions, the event must be unintentional, and cannot be due to inadequate qualifications. You can exercise this waiver only **once in a five-year period**. If two pilots are involved, each submits a report and each gets an ID Strip.

Jennifer Caron is FAA Safety Briefing's *copy editor and quality assurance lead. She is a certified technical writer-editor in aviation safety and flight standards.*

Learn More

Check out the Advisory Circular (AC 00-46E) on the Aviation Safety Reporting System (ASRS) at:
go.usa.gov/xmVEZ

[OTHER] PILOTS LOOKING OUT FOR YOU

Some Trusty Tips on How to Take a Hint

BY JASON BLAIR

"Wow, sure is a strong crosswind out there today — I sure wouldn't want to fly in that!" How many of you can recall hearing words like these from a fellow pilot, just as you're headed out to fly? Or, how about an instructor who hints that the Facebook discussion you posted while "skirting around thunderstorms" described a flight that was a bit "too close for comfort." Sometimes these little comments go unnoticed by us pilots, but we go out flying anyway. But maybe, just maybe, these little offhanded comments are subtle hints that other pilots, instructors, or even examiners are trying to give us without being too blunt. It's a nice way of saying, "Hey you, you really shouldn't be going flying today," or "You really shouldn't have made that flight, even though you got lucky enough for it to work out."

A few years back, I wrote an article for this publication highlighting our responsibilities as pilots to "be our fellow pilot's keeper" and to help make others aware when they are taking unnecessary risks. This can be a hard thing to do for fellow pilots, as it calls into question their decision-making skills. It can be even harder to take the hint ourselves when other pilots return the favor by questioning our own flying. Many times when other pilots are trying to tell us that what we are about to do may not be the best decision, it will not be obvious. The cautions can

come as small comments, questions, or even an odd look that should prompt us to carefully review what we are about to do, and hopefully think twice before going on a flight.

Pushing Our Limits

We want to go fly. It's natural. As pilots, we love it and sometimes we have places to go and a timetable that drives us to a "go" decision. But that doesn't always mean we should. What makes it even more difficult is that as pilots, we are often the most biased judges of whether or not we should go. Any number of pressures can color our judgment, letting us fall prey to the "I am mostly, almost, pretty sure that I can probably make the flight successfully." Here's a good rule of thumb: If you have to question whether the flight can be made safely, or use the word "probably" in connection with a flight, you should consider delaying the trip, finding an alternate means of transportation, or not going at all.

Subtle Hints

When we think about pushing our limits, there are usually people around us who can provide valuable and important feedback — and who sometimes offer it voluntarily, even when it's not obvious.

Savvy pilots have a set group of people that they can call upon to help evaluate decisions. It might be a former flight instructor, an experienced mentor pilot, or a friend who has a similar experience base. But, unless you have someone who is truly prepared to tell you the truth, even those resources may be reluctant to tell you that "you are being stupid and going to kill yourself today if you make that flight." So, it may take a little reading between the lines to recognize that your fellow pilot is really giving you some hints that you should take into account when you do your flight planning. These subtle hints or comments should merit your attention.

For example: Instead of telling you up front that your plan to fly to an airport that is reporting close to minimum instrument flight rules (IFR) conditions is a bad idea, they might instead say something like, "Gee, I see that tomorrow's weather looks a little better than today." Or they might say, "I notice that the crosswind today is pretty darn strong. If I were making this flight, I might land at airport XYZ 20 miles away that has a runway into the wind and then drive the rest of the way." These comments can be "nice" ways of telling you that they think you should reconsider your plan.

Take the Hint

I clearly remember a practical test I had scheduled a couple of years ago for a private pilot candidate who was about a two-hour drive away. As a pilot, and an aircraft owner, this situation presents a great excuse to fly instead of drive! But the weather had other plans. About three hours before the start time, I called the applicant and said, "I see that the weather isn't all that great today [it was about 900 feet overcast with two miles visibility and lake effect snow showers in February in Michigan], are you thinking the weather will be good enough to do your checkride, or do you want to reschedule?" Wanting to get the checkride done, and not contextualizing the fact that the designated pilot examiner (DPE) was calling him and asking, he said, "Yeah, I think we can still do it today." Sigh.

I followed, adding, "Okay, I just wanted to check and make sure, because I had planned on flying down to save some time, but I don't think the weather is good enough for me [the experienced DPE, instrument rated, etc.] to fly myself down, so I will have to leave a little earlier to drive and be there on time."

I paused, wondering if he would take the hint. He didn't.

"Okay," he responded, "I will see you when you get here."

Long story short, the ground portion of the exam didn't go well, and we didn't have to get to the decision of whether or not he would fly for the practical test. However, I did ask what he would have done if I had told him he had passed the ground portion and moved on to the flight portion of the test. His answer showed he still wasn't taking the hint. "I guess I would have had to fly to an area of VFR to do the maneuvers on the test," he responded. Yup, a private

pilot candidate. He obviously hadn't learned how to apply VFR weather minimums during his training.

This may strike you as an extreme example of not taking the hint, but you would have thought that if the DPE wasn't willing to fly in the weather, it would have clued him in. Unfortunately, this happens all the time. At airports I visit, I see pilots whose instructor tells them they don't think it's a good day for a lesson, or a pilot who walks by another pilot and asks, "Are you really going to make that flight today?" But then the pilot does it anyway.

For sure, some pilots have more experience and aircraft that are more capable. But as pilots, it should give us pause when another pilot asks the "are you sure you are going to do that flight?" question. Take the hint.

Take the Time to Mitigate the Risk that Can Break an Accident Chain

Taking the time to consider comments or input from other pilots doesn't have to mean you can't complete a flight. It can be an opportunity to make changes to your flight plan. High-risk flights can often be mitigated to low-risk flights.

Leaving at a different time, taking a different route, choosing different airports, bringing another pilot — there are any number of mitigating efforts that make for a safer flight. When you get input from fellow pilots, instructors, or examiners that hint at unnecessary risks, take the time to pause and consider if you might alter your plan of action. These risk mitigations can stop one or two actions from snowballing and creating a situation that can take a pilot beyond their, or their aircraft's, capabilities.

I recently got a phone call for an instrument practical test that the applicant "just had to get done by Friday" [this was on Wednesday of the week] because he had to fly his family in his Cessna 182 [that only had round gauges and a DME] from Michigan to Florida. Looking at the weather for the next two days, it looked like a mix of rain, snow, sleet, and pretty much everything else you could imagine a March day in Michigan could deliver. Looking at my calendar, I honestly could have worked it in, but I chose to tell the pilot "my schedule was full until the next week." Interestingly, and not uncommonly, two other examiners I know locally also got a call from the same gentleman. They told him the same thing. Could one of us have given him a test time? Maybe. But all of us looked at what he told us he wanted to do with a brand-new instrument rating, in really ugly weather, and we all decided independently that none of us wanted our names associated with that practical test. The applicant probably never knew that three different DPEs had politely influenced his ability to attempt flying on a fresh instrument rating — with his family aboard — through what turned out to be icing, thunderstorms, and low IFR.

In this case, the lack of ability to complete his rating test became an outside force that mitigated the risks he was going to take. He wasn't instrument rated in time to make the flight, so he didn't. Did we as DPEs avert a definite accident? We will never know. I do know that low-time, inexperienced instrument pilots flying a fully-loaded, minimally equipped aircraft in storms and icing do not fare well in the risk column.

A pilot like this won't always have someone who will stop the flight for them. That means that we as pilots need to be able to accept advice (or hints) thoughtfully, not emotionally, and mitigate as many risks as we can.

It Starts with Asking for Advice

There isn't a single pilot who has seen every weather condition, knows every airport, or is a perfect pilot in every aircraft. A little humble pie can go a long way. Don't be afraid to seek advice and let other pilots help serve as your keeper. They can help keep you from stumbling into conditions or situations that are either unforeseen or beyond the limits of your piloting skills, or your aircraft's, capability.

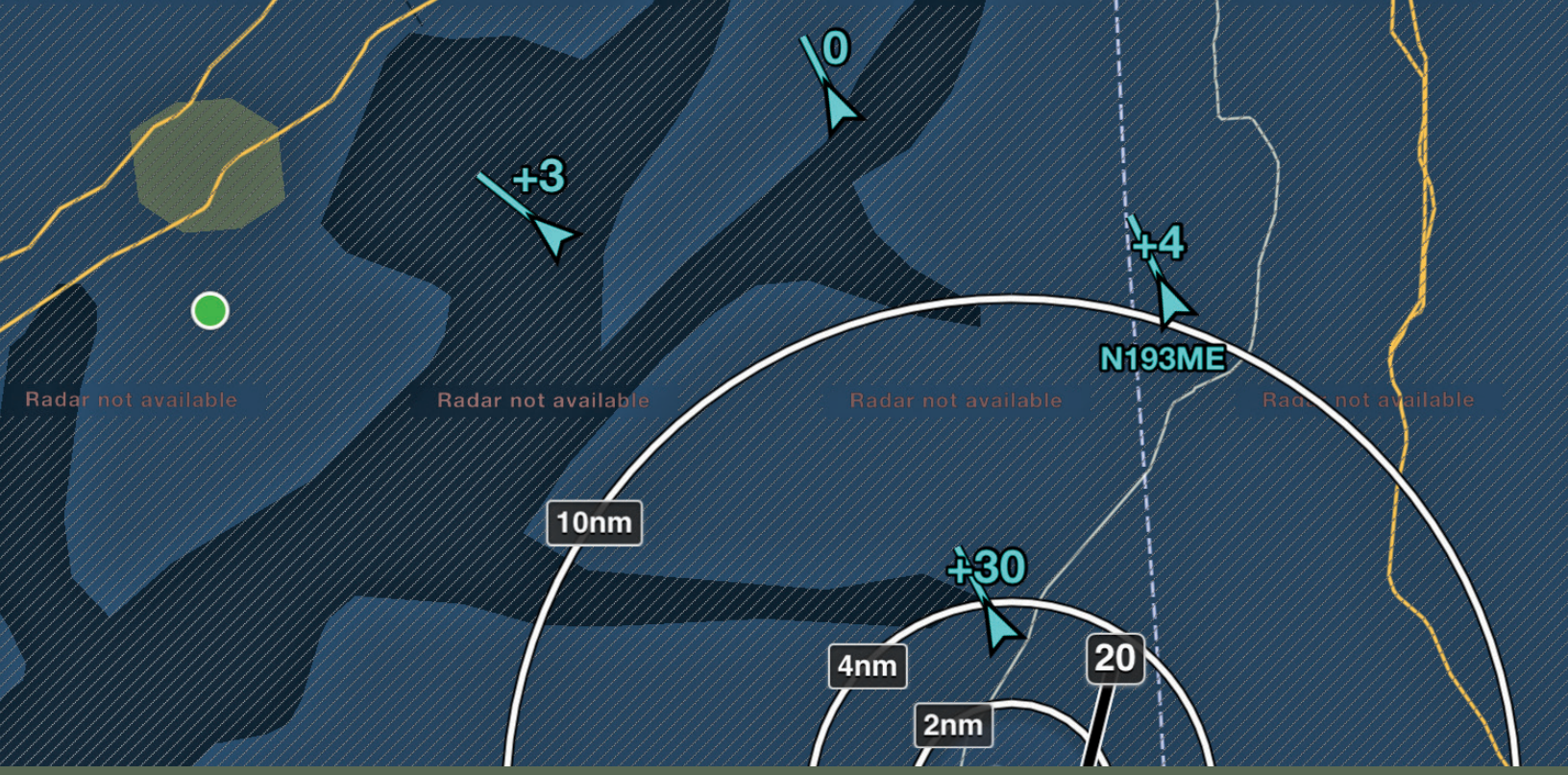
Don't be afraid to seek advice and let other pilots help serve as your keeper.

Talking with other pilots when we see them doing something that could lead to tragedy can be a hard thing for many pilots to do; we generally don't want to judge another pilot. It can be even harder to allow another pilot to be OUR keeper and take such input.

Let's face it. We want to think we are all highly capable pilots. But a little modesty and pragmatism can go a long way toward not having a flying career or pastime cut short. It may in fact be an even better indicator of a good pilot.

With that said, fly safe and pay attention to the subtle, but potentially critical, comments you get from your fellow pilots. Those comments and suggestions may be a polite way of helping you avoid dangerous decisions in your own flying.

Jason Blair is an active FAA Designated Pilot Examiner, CFI, and consultant on aviation training and regulatory efforts.



BETTER WITH ADS-B

THE PROOF IS IN

By John Croft

It's no accident that Jimmy Wright is an emissary on the virtues of Automatic Dependent Surveillance – Broadcast (ADS-B). In fact, it was an accident that made him such.

A wrong turn in a blinding snowstorm near Sitka, Alaska in December 1994 resulted in his Cessna 206 floatplane crashing on a beach and hurtling into a wall of spruce trees. Despite immense odds, he lived to tell the tale. For the past 15 years he has worked tirelessly as an FAA contractor to get general aviation pilots to equip with ADS-B and the moving maps on which they typically display the uplinked traffic and weather.

For Wright, ADS-B avionics and a moving map — brought to Alaska with the Capstone programs that started five years after his crash — would have made all the difference in the world.

The Report Is In

A new safety analysis and reports from the field show that the efforts of Wright and others have been worth it. ADS-B is making a positive difference for safety, and not just because of traffic and weather.

A growing number of indirect or complementary benefits are emerging, not the least of which is an evolution in the safety culture in the cockpit

Jimmy Wright (left) and friend, Kerry Wade, prepare for a trip in Wright's DeHavilland DHC-2 Beaver floatplane.

and in flight following. Using ADS-B In, pilots who now have traffic and weather at their fingertips are determining their own best practices for strategically avoiding what could otherwise be a narrow escape with another aircraft, or a rain shower or thunderstorm. Dispatchers, with the benefit of highly accurate one-second position updates, are able to track the location of all of their assets precisely.

The safety analysis, funded by the FAA, focused on general aviation (GA) and small air taxi accidents in the continental U.S. and small air taxi accidents in Alaska between 2013 and 2018. The results show a significant reduction in the accident and fatal accident rates for aircraft equipped with ADS-B Out and In compared with those that were not equipped, in part due to the cockpit displays that pilots typically add when installing the avionics. ADS-B In provides air-to-air and ground-to-air (from FAA radar) traffic and through the 978 MHz UAT link, a variety of weather products, including local and regional NEXRAD and weather at airports.

The authors of the report, FAA contractors Daniel Howell and Jennifer King, found that GA and small air taxi operators who installed ADS-B Out and ADS-B In, including a panel mounted or portable display with moving map and terrain clearance applications, experienced a marked decrease in three types of accidents: weather-related, controlled flight into terrain (CFIT), and CFIT combined with weather. Howell and King noted that there was a "measurable" reduction in midair collisions, but since such accidents happen so rarely, there was not enough data to prove a "statistically significant" reduction as they had proven with the other accident types.

Howell and King split their accident research into two groups — those in Alaska, which has had the ADS-B infrastructure since 2005, and those in the lower 48 states, where the infrastructure was mostly complete in 2013. For Alaska, they studied air taxi accidents from 2005 – 2017, identifying ADS-B In equipped accident aircraft by comparing tracking data from the FAA's ADS-B Performance Monitor with NTSB accident data. The monitor, which receives ADS-B data from the FAA's nationwide network, assesses the performance of individual aircraft compared to the requirements in the ADS-B rule.

For accidents after 2012, they determined which aircraft were equipped with ADS-B In through a bit in the ADS-B Out stream that indicates the aircraft is equipped with ADS-B In. For accidents before 2012, they used FAA Capstone records to determine which aircraft were equipped.

Key to coming up with accident rates was determining how often the aircraft flew and which ones were equipped. The study considered both FAA data on arrivals and departures, information from the Bureau of Transportation Statistics, and FAA information on fleet equipage.

Wright is a familiar face at the FAA booth at Sun 'n Fun and other shows, where he helps pilots assess their ADS-B performance.

Howell and King concluded that Alaska air taxis with ADS-B In experienced an overall accident rate that was 55-percent less than those unequipped. That translates to approximately 90 accidents avoided between 2005 and 2017. The estimated drop in the accident rate is more than twice the FAA's initial estimate that ADS-B would result in a 20-percent reduction in accident rates for Alaska. They also found no "statistically significant" reduction in the

Wright (left) prepares to load the DHC-2 Beaver with cargo prior to launching on another flight in Alaska.

fatal accidents for Alaska as the numbers were similar for equipped or non-equipped aircraft.

For the continental U.S., the average rate reduction across four types of accidents (mid-air, CFIT, weather-related, and CFIT plus weather accidents) was approximately 50-percent for equipped aircraft, with a cut in the fatal accident rate of about 90-percent. That translates to about 36 fewer accidents and 16 fewer fatal accidents between 2013 and 2017. As additional aircraft are equipped and more time goes by, the FAA will be able to get a more precise handle on the direct safety benefits of the technology. After January 1, 2020, all aircraft flying in "rule" airspace will be required to carry ADS-B Out.

More than Traffic and Weather

What is not obvious in the study results are the secondary benefits that operators, pilots, investigators and others are increasingly discovering.

One area where ADS-B Out is boosting safety and situational awareness is with flight following — a capability that would likely have sped up the rescue operation for Wright. On that fateful day, Wright was flying from Juneau to False Island to Angoon then back to Juneau. The standard operating procedure at the time was to have a flight plan for each leg and for the pilot to call the home base every 30 minutes en route on an FM radio frequency, along with calling after a takeoff or landing. Dispatchers would keep track of the reported positions on a spreadsheet. In some cases, radio contact wasn't possible and calls couldn't be made on time because of the terrain.

It was on the leg from False Island to Angoon that Wright encountered the snowstorm. Based on his flight plan and departure call, the air taxi's agent in Angoon knew when his flight should have arrived. Ten minutes after his ETA, the agent knew something was wrong. What he didn't know was where, along the 25 nautical mile route, Wright had disappeared. The search began, but finding him took much longer due to the lack of surveillance and the limited reception of his 121.5 MHz Emergency Locator Transmitter in mountainous terrain.

That's a situation air taxis in Alaska no longer have thanks to ADS-B Out. "We have in our flight follower's office and in our main office a program that has a map showing all of our equipment — tail number, position, altitude, and speed, based on standard pressure," says Brett Coblenz, chief pilot of Juneau-based Alaska Seaplane Service. Coblenz says there are still some "dead zones" where the ADS-B Out signal can't be received, "but for the most part we can see where the aircraft are at all times on a computer screen." When they do receive ADS-B, they can narrow down an aircraft's position to about 1,000 ft.

ADS-B position accuracy and a speedier recovery could have made a difference for Wright, who ultimately lost part of his leg in the accident. After his recovery, Wright returned to floatplane flying until he joined the FAA as a subject matter expert on ADS-B in 2004, based largely on his experience with Capstone. Today, he is a human encyclopedia of knowledge about the technology, and rarely is he not on the phone talking to repair shops, manufacturers, and pilots solving technical problems. He is also a regular staffer of the ADS-B exhibit at various trade shows throughout the year.

"I'm always on the lookout for ways to serve," he says.

John Croft is a flight instructor and a speechwriter/editor in the FAA Office of Communications. Croft uses ADS-B in the Piper Archer he co-owns with two other pilots, and he regularly flies a small team of FAA communicators to talk to pilots and other stakeholders about ADS-B.

ADS-B
EQUIP NOW!
faa.gov/go/equipadsb

Don't Fail the Veil!

Federal Aviation Administration

The 2019 National GA Award Honorees

For more than 50 years, the General Aviation Awards program and the FAA have recognized aviation professionals each year for their contributions to GA in the fields of flight instruction, aviation maintenance/avionics, and safety.

The FAA and the General Aviation Awards Committee will present individual plaques to the recipients of this year's awards at EAA AirVenture 2019 in Oshkosh, Wisconsin, and add their names to the permanent plaque in the lobby of the EAA AirVenture Museum. The prize package for each national honoree includes an all-expenses-paid trip to Oshkosh and other special GA Awards activities. Meet this year's honorees!

Nominations and applications for the 2020 General Aviation Awards will be accepted starting July 1, 2019. If you are acquainted with a flight instructor, AMT, avionics tech, or FAASTeam Rep whom you think might be deserving of an award at the local, regional, or national level, we encourage you to nominate him or her. If you are an aviation professional with a distinguished career in one of these categories, we encourage you to apply. For more information about nominating or applying, please go to GeneralAviationAwards.com/nominations.

2019 National Aviation Technician of the Year

Jon David Monti of Gardnerville, Nevada, showed a propensity for all things mechanical with an interest in disassembling and improving everything he touched from an early age. He soloed an airplane on his 16th birthday and earned his private pilot certificate on his 17th birthday. He majored in mechanical engineering in college. He also earned his instrument rating, commercial pilot certificate, aircraft and powerplant (A&P) mechanic certificate, and inspection authorization.

In 1975, Dave founded Rebuilt Aircraft, Inc., at the South Lake Tahoe Airport in California, which relocated two years later to Minden, Nevada. His goal was to provide specialized maintenance and repair services for owners of Beechcraft *Bonanzas*, *Barons*, and *Travel Airs*.

In 1984, Rebuilt Aircraft, Inc., became a part 145 repair station, and Dave has served as chief inspector ever since. He also served as a FAA designated airworthiness representative (DAR) for more than 25 years preparing numerous aircraft for export to other countries and inspecting foreign aircraft for import. Dave and his staff at Rebuilt Aircraft perform an average of 40 annual inspections and numerous major and minor alterations each year. Dave also holds a supplemental type certificate (STC) to upgrade early 185/225 horsepower *Bonanzas* and *Debonairs* to the 260 horsepower Continental IO-470-N engine. Customers fly their Beechcraft airplanes to Dave's shop from 11 states.

Dave has been an integral part of the instructional staff for the Bonanza Pilot Proficiency Program (BPPP) since 1988 and has participated in more than 250 Beechcraft clinics.

Dave is a regular presenter at local FAA WINGS safety seminars in the Minden, Carson City, and Reno area. He enjoys supporting his local FAASTeam in multiple roles and earning WINGS credits himself. He was originally appointed as a FAA aviation safety counselor in 1999 and has served through the program's evolution into today's FAA Safety Team — or FAASTeam.

During his 32 years as a life member in the American Bonanza Society (ABS), Dave has presented maintenance training topics at many ABS national conventions. Through his writing, Dave helps support maintenance outreach activities, including co-authoring "Flight Controls, Flap and Trim System Inspection, Repair, and Rigging."

Over the years, Dave has consulted with countless owners and mechanics of Beech airplanes. He averages more than 300 pro-bono interactions each year providing guidance to Beech owners and mechanics. (rbuiltacnv@gmail.com)

2019 National Certificated Flight Instructor of the Year

Gary Dale Reeves of Decatur, Texas, is an airline transport pilot (ATP) and master flight instructor with more than 7,500 hours (mostly from instruction given) in more than 50 types of aircraft — from a Cessna 172 to a Beechcraft 1900.

Gary is the founder and chief safety officer of PilotSafety.org, which offers free and low-cost training programs to pilots. He specializes in single-pilot IFR training using autopilots, GPS, and electronic flight bag software.

In 2016, Gary created Master Flight Training to provide three-day, Mastering Single-Pilot IFR programs for pilots who fly with Avidyne or Garmin glass cockpits. In the past three years, he has provided this training to more than 60 pilots in 24 states involving 26 different aircraft models.

Since 2012, Gary has been a lead FAASTeam representative — first with the Long Beach FSDO in California, and now with the North Texas FSDO. As a volunteer, he has taught more than 130 free FAA WINGS safety seminars in 10 states. He is an in-demand speaker at major general aviation events including EAA AirVenture, Sun 'n Fun, AOPA regional fly-ins, and the Northwest Aviation Expo.

Gary is the official national training provider for both Avidyne Avionics and Genesys Aerosystems (S-TEC). He is also a member of the Aircraft Owners and Pilots Association (AOPA), American Bonanza Society (ABS), Cirrus Owners and Pilots Association (COPA), National Association of Flight Instructors (NAFI), and the Society of Aviation and Flight Educators (SAFE). (GaryR@PilotSafety.org)

2019 National FAA Safety Team Representative of the Year

Karen Ann Kalishek of De Pere, Wisconsin, has served as FAASTeam lead representative for the Milwaukee FSDO since 2015, and as a FAASTeam representative since 2013. She is a master flight instructor and FAA Gold Seal Instructor.

As lead representative, Karen is responsible for recruiting and mentoring new FAASTeam volunteers, and organizing 15-20 FAA WINGS safety seminars a year. She has validated approximately 1,000 credits since joining the FAASTeam and is now a new WINGS Pro — responsible for promoting program involvement and activities throughout Wisconsin.

Karen is an independent flight instructor and averages 700 hours per year of flight instruction given. She has a special fondness for antique and experimental aircraft, and she is the proud owner of a Van's Aircraft RV-6. She is also a Cirrus Training Center instructor.

Karen is also a volunteer and captain in Civil Air Patrol. As an Auxiliary Airman, she serves as a CAP flight instructor, G1000 instructor, check pilot, safety officer, aerospace education officer, public affairs officer, special flight release officer, mission pilot, and cadet orientation pilot.

Karen holds bachelor's degrees in accounting and business administration and a master's in business administration. Before becoming a full-time flight instructor, she was an executive in the banking industry, taught finance courses in graduate school, and for 20 years ran her own firm providing international consulting services in 37 countries. She is a certified public accountant, licensed real estate broker, and former certified fraud examiner.

In 2014, Karen spearheaded a project to develop an aviation training program for first responders — working together with a captain in the Green Bay Fire Department who is also a pilot. She has co-presented this scenario-based training program six times (including once at AirVenture), and has shared it with other EAA Chapters. The Wisconsin Bureau of Aeronautics adopted the program.

Karen serves on the board of directors of the National Association of Flight Instructors (NAFI) and is a member of the Wings Industry Advisory Committee (WIAC). In 2014, she founded the Green Bay IMC Club and serves as its leader and club coordinator. Since 2006, she has served as treasurer of EAA Chapter 651, and currently serves as an EAA Flight Advisor for the chapter. Karen is also a member of Women in Aviation International and The Ninety-Nines. (kkalishek@yahoo.com)

Drone Debrief

EMANUEL CRUZ

Sharing the Skies – Safely!

Walking down the street recently, I came across the illuminated orange hand on the other side of the intersection that clearly said, "don't walk." As I stood waiting for the return of the "walk" sign, I saw a couple of teenagers head into the road. They had apparently seen the stopped traffic and figured they could cross. But then a car started to make a left turn into the intersection. They made it, but they had created a greater risk for themselves, and their actions affected the flow of traffic. I remember thinking that if those kids were drivers, they might have acted differently.

There is a parallel in what the FAA is facing now with the new entrants to the skyways — drone operators. Traditional pilots understand that the skies are a roadway, but not all individuals who operate drones share that understanding. Many see drones as a contraption more akin to a phone than an aircraft. But at the high speeds that manned aircraft fly, an encounter with even a small drone can cause tragic results. So as drone technology develops, the FAA is also working to bring these operators into the same safety culture that traditional aviators incorporate from the start of their training.

So as drone technology develops, the FAA is also working to bring these operators into the same safety culture that traditional aviators incorporate from the start of their training.

To engage with the broad audience of these new operators, the FAA has established a presence at major tradeshows to share safety and regulatory considerations when operating a drone. For example, for the past three years the FAA has staffed a booth in the drone section of the Consumer Electronics Show, a trade show that attracted over 180,000 attendees from 160 countries in 2017 and 2018. The agency distributed materials on registration, flying safely, and regulations for both recreational and commercial operators. Additionally, the FAA has joined forces with public safety officials, the amusement park industry, academia, and more to share the safety culture message.

The FAA recognizes that there is already an industry of drone operators with a strong commitment to safety, and partners with these industry members to amplify the safety message. Organizations such as the Association for Unmanned Vehicle Systems International (AUVSI) and the Academy of Model Aeronautics (AMA) are key partners, and they support a public education campaign called, "Know Before You Fly." Additionally, the agency works with the Unmanned Aircraft Safety Team (UAST), which is an industry-government partnership committed to ensuring the safe operation of drones in the National Airspace System. The UAST includes traditional aviation organizations such as the Aircraft Owners and Pilots Association (AOPA) and the Aerospace Industries Association (AIA), as well as drone manufacturers and companies using drones in their operations. This collaboration aims to leverage partnerships to develop safety enhancements across the drone industry.

Sharing the safety message and leveraging industry buy-in are important elements for developing a culture of safety in drone operations. The FAA is also working to build a strong safety culture inside companies that are just beginning to carry out operations with drones. The agency is pleased to find that many of these companies already have a robust safety culture in place that they can leverage as they expand into drone operations. After all, companies whose work includes climbing towers or rappelling down cliffs would not stay in business without ensuring safety in their daily operations. As in every area, though, there is always room for improvement — and the FAA is doing everything we can to help impart the safety culture message.

Emanuel Cruz is the manager of the Safety and Operations Branch in the FAA's Office of Unmanned Aircraft Systems.

Learn More

KnowBeforeYouFly.org
UnmannedAircraftSafetyTeam.org

JENNIFER CARON

Why Should I File a Service Difficulty Report?

Because It's the Right Thing to Do

If I see upcoming road hazards, such as an accident or a disabled vehicle, I flash the headlights. Where I live, it is a goodwill gesture to let fellow drivers know to be vigilant.

That same mentality is what drives us to step forward, speak out, and let other people know when something's not right. If you, or other mechanics in your shop, see either brand new issues or "that same old problem" with a propeller, an appliance, or any aircraft part for that matter, please say something — and not just to those in your shop. **Report it online to the aviation community.**

We Need Your Input

As a maintenance professional, you are on the front lines of the industry. If a system component or a part has malfunctioned, report it. If there's a flaw or an imperfection, report that too. It's confidential — you can remain anonymous if you choose — and there's no punishment for reporting.

To file a Malfunction/Defect Report (MDR), go online to the FAA's Service Difficulty Report (SDR) system at av-info.faa.gov/sdrx. Under the Public Functions tab, select Create a Malfunction/Defect Report.

"Please include the part number, what was broken, and what you did to fix it," says Pennie Thompson, SDR Program Manager in the FAA's Flight Standards Service. "You don't have to include the step-by-step process, but a brief narrative is helpful." Please also include time-in-service or cycles for the part and/or airplane, if known. That's valuable information safety analysts need to determine risk. Thompson encourages including a phone number or an email address. "The report is anonymous, and non-punitive," she says, "but we may need to contact you for additional details."

If you have repeated problems on the same type of aircraft, or part, you should file a report after each occurrence so that the FAA can detect a possible trend.

Thompson understands the frustration if you don't see your report reflected in the system. "Our system is in the process of a much-needed upgrade," says Thompson. "The search engine has its quirks, but your report is in the queue and will be reviewed by our safety analysts. It just takes time to get it in the database, so please do keep reporting." You can follow up on your report by email to 9-AMC-SDR-ProgMgr@faa.gov.

Why Should I File a Report?

For part 91 operators, pilots, and mechanics who work their own shops, SDR reports are voluntary, not mandatory. But you will have the satisfaction of helping others.

"There are just so many GA planes out there, and we have so few reports coming in from the shops," explains Thompson, "We need that data to spot trends in defects or malfunctions."

Thompson stresses that SDR data is taken very seriously. "We read every single record, identify the safety issue, and remove details like name and A&P license numbers for upload into SDR," says Thompson. The FAA's Monitor Safety/Analyze Data (MSAD) process automatically uploads data from SDR, and it's used to identify and manage risk in aviation products.

Speak up about what's going on with a part or component. Tell us about that fractured bolt or corroded stringer. We're all in the National Airspace System together, and we have to have each other's backs.

"SDR and MSAD are valuable tools in our safety culture toolbox," says Keith Lardie, Aviation Safety Analyst in the FAA's Continued Operational Safety Policy section. "These programs let us collect and look at data, understand trends, and get proactive with mitigations before anything bad happens."

"We had a compressor brush report in MSAD," says Christy Eckerman, Continued Airworthiness Specialist in the FAA's Wichita Airworthiness Certification Office. "SDR identified it as a frequently defective part, and we were seeing aircraft tail fires as a result. Thanks to the multiple reports in SDR from GA mechanics, we were able to issue an airworthiness directive to address the problem."

Bottom line? Speak up about what's going on with a part or component. Tell us about that fractured bolt or corroded stringer. We're all in the National Airspace System together, and we have to have each other's backs.

Jennifer Caron is FAA Safety Briefing's *copy editor and quality assurance lead. She is a certified technical writer-editor in aviation safety and flight standards.*

TOM HOFFMANN

How to Measure Safety Culture

For those in the aviation safety realm, the task of measuring safety relies heavily on numbers, rates, and ratios. It's pretty black and white with thresholds and not-to-exceed rates as clear sign posts of success or failure. For example, we often measure success in the general aviation arena by having the GA accident rate fall below a preset threshold of one per 100,000 flight hours or by achieving a certain year-over-year reduction in accidents. While these are perfectly valid methods of measuring safety, these numbers can often neglect a more subtle but important underlying factor for many accidents. I'm referring to a pilot's safety culture, which relates more to a pilot's ideals, values, and his/her propensity for certain behaviors. However, when you start to try and "measure" safety culture, that's where the math starts to get a little fuzzy.

As many researchers would agree, the first step in being able to understand and measure a seemingly vague concept like "safety culture" is to define what it is. That's where the General Aviation Joint Steering Committee (GAJSC) comes in. In its initial findings during a loss of control (LOC) accident study back in 2011, the committee found several accidents where careless behavior, poor aeronautical decision-making (ADM) skills, or an unawareness of risk were contributing factors. That led to the development of a specific Safety Enhancement topic for safety culture, one of several the committee developed to help prevent LOC accidents, and which would put a spotlight on what many would consider an often discussed, but nevertheless undeveloped area of exploration for improving GA safety. Later, a working group formed to more narrowly define the GAJSC's objectives beyond its initial aim of simply "improving safety culture."

To help define the concept of safety culture, the GAJSC partnered with a team of researchers, led by Dr. Scott Winter at Embry Riddle Aeronautical University (ERAU), who set out to create an instrument that would gather valuable data on how safety is perceived by pilots and provide a scale with which to measure safety culture among GA pilots who operate outside of a formal flying organization.

"The idea was to create a survey tool that would help measure individual safety cultures," said Lauren Haertlein, General Counsel and Director of Safety & Regulatory Affairs with the General Aviation Manufacturers Association. "That data would then be used by the GAJSC to help figure out what a positive safety culture is, identify who has it and who doesn't, understand how we might be able to better reach those individuals who don't, and guide outreach and education efforts to bring them into the fold." According to Haertlein, who also coordinates the safety culture working group, the goal is to influence outreach going forward. She sees the tool as "a lens to look at what we're doing and say — is there a better way to reach the people we haven't reached?"

The ERAU team developed its initial phase of the instrument and administered it to ERAU students on campus who held at least a private pilot certificate. The team's preliminary findings, although limited to a fairly homogenous sample group, showed promise of being able to correlate and convey a pilot's view of safety culture. Phase 2 of this study aims to target a much broader cross-section of typical GA pilots nationwide to improve the effectiveness and accuracy of the tool.

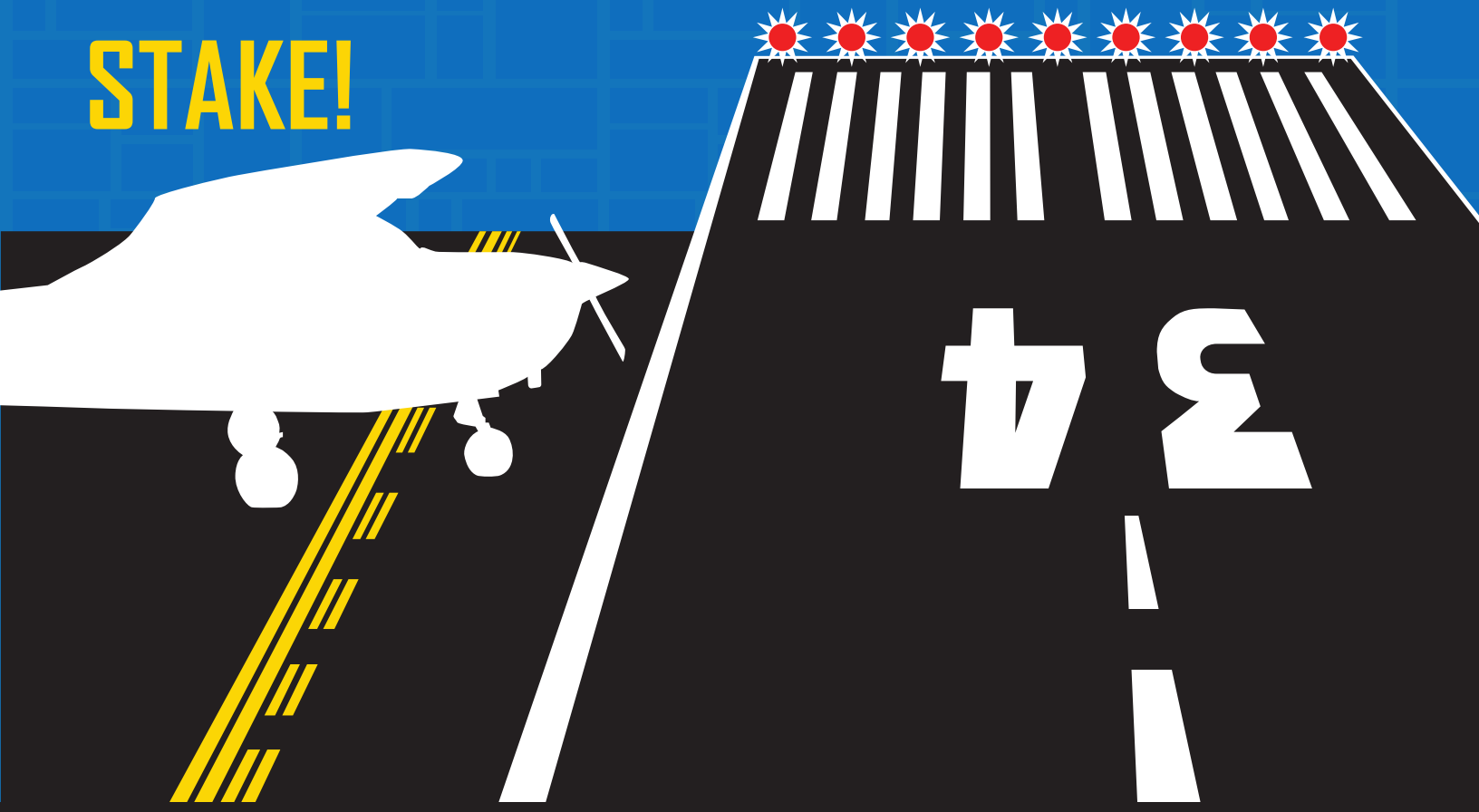
To help support this work, a sub-team of the safety culture working group set out to provide some qualitative data, led by Dr. Jeff Edwards, a former naval aviator and founder and current president of the Lancair Owners and Builders Association. Dr. Edwards' team performed an ethnographic study, observing dialogue on different online pilot safety forums to understand how pilots are viewing safety. According to Dr. Edwards, there were many positive comments observed — experienced pilots trying to help answer questions and direct pilots to reputable resources. But there were some concerning things observed as well, including efforts to help justify or validate risky behavior like buzzing.

The question going forward is how to address this dichotomy. How do we find those people who lack a proper safety culture, and how do we encourage them to become good aviation citizens? "If we want to improve safety culture, we need to take a thoughtful and data-driven approach to understanding what we're talking about, who we're talking about, and how to reach them," says Haertlein. "That's what we're trying to do."

Stay tuned for more information on the GAJSC's efforts to address safety culture.

Look Listen FOCUS

LIVES ARE AT STAKE!



- **IT CAN HAPPEN TO YOU:** By keeping your head down to complete a checklist or other operational duties, OR engaging in non-operational conversation with passengers while approaching the runway, you may accidently cross a hold short line.
- **THE FIX:** Complete all checklists prior to leaving the ramp and follow the airlines' lead and adopt a sterile flight deck rule while taxiing.

Federal Aviation Administration

For additional runway safety education, take the AOPA Air Safety Institute's Runway Safety online course at www.airsafetyinstitute.org/runwaysafety.

GENE TRAINOR

Timing is Everything

Little at the FAA speaks more to our safety culture than airworthiness directives (ADs). As many of you already know, ADs can often mean the difference between a safe flight and a disaster.

Despite their importance, I know that any discussion about ADs could even put those cartoon dancing penguins to sleep. Stay with me here. I may not keep your interest like a Justin Timberlake song, but I'll do my best not to bore you.

ADs are our way of telling you to watch out for an unsafe condition (usually involving a part) and to make changes because your safety depends on it. Of course, your involvement in this process matters too. That's why the FAA welcomes your comments when ADs are issued. It's a way for you to directly engage with us, and we want to promote and encourage that.

However, we at the Rotorcraft Standards Branch have noticed that many of you have been commenting on the Final Rule for an AD, rather than the Notice of Proposed Rulemaking (NPRM). It makes a difference because of how the federal rulemaking process works. You can have a lot more influence on our decisions if you comment on an NPRM. Unless we make an error — and frankly errors are rare — the Final Rule goes as is. We might respond privately to your comment, but that's about it. If you do find an error in an AD or have a question about something in an AD, it would help us a lot if you respond to an NPRM. We can make changes a lot more easily at this stage. Otherwise, we have to go through a new AD process even to correct an error. That takes time.

You can find NPRMs and Final Rules on the internet at regulations.gov. Filter for your model helicopter. Several ADs will pop up. The most recent ADs should be at the top, but that is not always the case. You might have to scroll down a little.

"What's the most effective way to comment on any rulemaking? Regulations.gov, of course," said Maria Garcia, the Rotorcraft Standards Branch AD coordinator. "The site not only allows you to comment on open NPRMs, but it also allows you to receive updates on the NPRMs of your choosing and view comments submitted by others. How cool is that?"

If you need a little more explanation of this process, let me break it down further.

ADs are legal documents that involve the collaboration of FAA technical writers, aviation safety engineers, attorneys, aviation safety inspectors, and managers. The FAA issues ADs to prevent or correct an unsafe condition on an aircraft.

ADs state the unsafe condition, mandate actions to prevent or correct the unsafe condition, and provide the legal justifications for requiring the AD. The Federal Register publishes these documents as NPRMs in print and online at regulations.gov. You then have the chance to comment at regulations.gov. Just click on the comment button. We *must* respond to your comments. Afterward, the Federal Register publishes the Final Rule and posts it at regulations.gov where you can see our response to your comments.

If an unsafe condition presents an immediate safety risk, Emergency ADs are sent to all known owners and operators of the affected helicopters. The Federal Register then publishes and posts the Final Rule version of an Emergency AD, along with a request for comments. This allows us to make more immediate corrective actions. Your comments will still be considered.

That's our AD process in a nutshell. The important takeaway: Comment on the NPRM rather than the Final Rule. If you do that, those of us here, I swear, will get up and dance.

Gene Trainor is a technical writer and editor for the Rotorcraft Standards Branch in Fort Worth, Texas. He previously worked as a newspaper reporter and editor.

Flight Forum

Here's some feedback from a member of our new GA Safety Facebook Page! Facebook.com/groups/GASafety.

Where Have All the PIREPs Gone?

The reason PIREPS have decreased in number has to do with the elimination of Flight Watch, where they were formerly filed.

— Jay

In 2015, the FAA's Flight Service combined the En route Flight Advisory Service (EFAS), known as Flight Watch, with the Inflight position, which streamlined functionality by providing both services on one frequency. Pilots are able to get all weather and aeronautical information from one certified specialist, including the ability to file a PIREP. We have implemented several improvements that make it easier to submit a PIREP by eliminating specialists' requirements for readback and focusing on details pertinent to forecast weather.

In addition, a campaign is underway to increase awareness and create better tools and training that will make it easier for controllers to disseminate PIREPs. We recognize this as an essential ingredient to the success of our PIREP improvement efforts. Please continue to submit PIREPs as we move forward with our cross-agency PIREP initiatives.

Is That My Parallel Runway?

The July/August 2018 issue of *FAA Safety Briefing* has a picture on page 14 with the following annotation: "When parallel runways are in place, an adjacent taxiway might be confused for a runway." The picture is a perfect example of runways that are not parallel. Just so you know.

By the way, you could do a whole article on intersecting runway operations.

— Richard

Hi Richard, the picture you reference is of Lincoln Airport (KLNK). This is an older photo of the airport (before some airport geometry corrections were made) but you can see 35R on the runway in the middle. Runway 35L is offset and to the left (and out of the picture). These runways have since been renumbered as 35 and 36 respectively, so yes, technically they are no longer parallel. However, the point was to illustrate that when you have a large parallel taxiway adjacent to a parallel runway (especially when the other runway is staggered and offset) it can be tempting to the pilot to think the taxiway is the other runway.

We like your suggestion for a piece on intersecting runway operations, and we'll keep it in mind.

Airspace	Altitude
Class A	All
Class B	Generally, from surface to 10,000 feet mean sea level (MSL) including the airspace from portions of Class Bravo that extend beyond the Mode C Veil up to 10,000 feet MSL (e.g. SEA, CLE, PHX)
Class C	Generally, from surface up to 4,000 feet MSL including the airspace above the horizontal boundary up to 10,000 feet MSL
Class E	Above 10,000 feet MSL over the 48 states and DC, excluding airspace at and below 2,500 feet AGL
	Over the Gulf of Mexico at and above 3,000 feet MSL within 12 nautical miles of the coastline of the United States
Mode C Veil	Airspace within a 30 NM radius of any airport listed in Appendix D, Section 1 of Part 91 (e.g. SEA, CLE, PHX) from the surface up to 10,000 feet MSL
Check out the airspace requirements map at go.usa.gov/xm8qy	

Let us hear from you! Send your comments, suggestions, and questions to SafetyBriefing@faa.gov or use a smartphone QR reader to go "VFR-direct" to our mailbox. You can also reach us on Twitter @FAASafetyBrief or on Facebook at facebook.com/FAA.

We may edit letters for style and/or length. Due to our publishing schedule, responses may not appear for several issues. While we do not print anonymous letters, we will withhold names or send personal replies upon request. If you have a concern with an immediate FAA operational issue, contact your local Flight Standards Office or air traffic facility.

SUSAN PARSON

Waiting and (Re)Balancing

Culture is a funny thing. Over the years, I have lived in several countries and visited many others, with still more on the want-to-see list. When you are in a new place, it's pretty easy to see (if not always to understand) cultural differences. Getting a clear view of your own culture is more difficult, perhaps because — as the saying goes — it's a bit like a fish trying to perceive water. Accustomed as we are to what we routinely experience, we can be oddly oblivious to quirks and characteristics that are immediately obvious to a newcomer.

The quirks and characteristics of our overall culture, perhaps magnified in the Type-Triple-A pilot culture, include a mission- and action-focused "value" calling us to constantly *be* more, to *do* more, and to *have* more. Always striving for "more" with no obvious way of gauging the achievement of "enough" can be exhausting. That may be why there seems to be a sudden surge in articles, books, and TV shows with titles that tout terms like "essentialism" and "minimalism." Japanese tidying expert Marie Kondo promotes limiting things and, implicitly, activities to those that "spark joy." The *New York Times* recently joined the party with Olga Mecking's April 29 article on "The Case for Doing Nothing." As Mecking puts it:

Being busy — even if we are *busy — is rarely the status indicator we've come to believe it is…instances of burnout, anxiety disorders, and stress-related diseases are on the rise. (…) Our culture does not promote sitting still, and that can have wide-reaching consequences for our mental health, well-being, productivity, and other areas of our lives.*

The Discipline of Distillation

I can relate to that, and I imagine that many of you can as well. For a long time, I didn't really see it. As for sitting still … are you kidding me?!

But the universe has a way of getting your attention if you aren't otherwise getting the message. Suffice it to say that several events over the past year motivated me to reassess key aspects of my life and start recalibrating for a better and healthier balance. That has meant distilling a fairly wide range of things, activities, and circumstances to what is really essential, to what truly sparks joy. Of these, the most significant adjustment was moving permanently to Arizona during the spring, becoming a full-time member of the "distributed workforce."

While positive overall, this change required another, less happy adjustment: saying goodbye to my northern Virginia flying club and the C182 *Skylane* I have loved and flown for more than a quarter century now (gulp). It is strange and disconcerting to find myself bereft of a familiar and steady mount for aerial joyriding. Though I am still immersed in unpacking and resettling at the time of this writing, it also makes me antsy that I don't yet have a good fix on when, or where, or what I will next be flying.

What I am endeavoring to do, though, is to use this somewhat unavoidable waiting period to strengthen and rebalance my personal safety culture. For ages now, I've had a list of aviation safety topics that I've wanted to study or review more carefully. My beau and I have talked about getting our glider ratings, and Arizona offers lots of opportunities for that particular pursuit. Because I have given myself a one-year moratorium on extracurricular activities (another discipline of distillation exercise!), I should also have the time to do such things.

It may not yet be the season of waiting and rebalancing for you but, as the lyrics to Taylor Swift's new song go, "you're the only one of you." So take it from me, and take good care of you.

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

PAUL CIANCIOLO

FAA Faces

Tina Buskirk & Ernie Copeland

FAASTeam Program Managers, Scottsdale Flight Standards District Office

Photo by Brad Kathrins

Cultivating a positive safety culture in our local GA communities can't be left up to nature alone. Safety doesn't just happen; it takes a team to grow the right attitudes.

In the Arizona community, that FAA Safety *Team* (FAASTeam) includes two native Arizonans — one specialized in operations and one in airworthiness — to provide life-saving guidance to local aviators and maintainers.

Tina Buskirk grew up in an aviation family. Her father flew refueling tankers for the Air National Guard and retired from American Airlines. Tina took her first flight lesson in an old WACO Aircraft at age 12. She eventually soloed while attending the University of Arizona in Tucson.

After college, Tina served as chief instructor for a collegiate flight program and then as a first officer for a regional airline flying the Bombardier CRJ-200. Since she missed teaching, she left the airline to teach students again — this time for Lufthansa Airlines at Airline Training Center Arizona (ATCA). Tina also developed an initial flight instructor course for German air force officers, which is when she first worked with Ernie Copeland.

Ernie enlisted in the Air Force at 17 as a reciprocating aircraft maintenance specialist, and he retired as a master sergeant in 1998. He then went to work for Aviation Management Systems at Phoenix Sky Harbor Airport working on Delta and Alaska Airlines airplanes.

Going back to his roots with piston-powered aircraft, Ernie then joined the team at Pan Am International Flight Academy. In 2006, he became the director of maintenance at ATCA where he met Tina. During his time there, he had an "open hangar policy" for flight instructors to bring their students in to see the actual aircraft systems that they were learning about.

Ernie joined the FAA in 2009, and Tina joined in 2011. Both of them originally wanted to work in safety outreach from the start, and they both reached their goals and reunited several years ago as FAASTeam Program Managers based in the Scottsdale Flight Standards District Office (FSDO).

Part of their success as advocates for aviation safety arises from their understanding that safety events are not just ops-only or airworthiness-only. They visit pilots and mechanics in their workplaces to get out into the community. Tina and Ernie conduct their safety presentations jointly and travel around Arizona with the assistance of more than 90 FAASTeam volunteer representatives. They outreach with flight schools, agricultural operators, Experimental Aircraft Association (EAA) chapters, Civil Air Patrol squadrons, air traffic facilities, airport authorities, individual operators and mechanics, police, fire and rescue, and local municipalities to promote safety culture and resolve issues.

One of the local issues is English language standards. Air Traffic Control (ATC) managers were concerned about communications difficulties with solo students. Tina and Ernie facilitated a method for each ATC facility to contact any of the schools directly if a student demonstrates language barriers. As a result, the schools can now take immediate corrective action and provide remedial training prior to releasing the student for repeated solo operations. The FSDO also receives these reports and helps flight instructors better understand how to conduct aviation English language standard evaluations on students throughout training. These actions continue to build a culture of trust and enhanced safety.

Every local community needs a little "T.L.C." from the FAA to help nurture the safety culture. Just like Tina and Ernie, there are stellar FAASTeam program managers across the nation tending to their *gardens* and growing a positive safety culture across the land.

U.S. Department
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