November/December 2024

FAA Safety BRIEFING

# Your Choice Your Flight

## A Compilation of Our Most Popular Articles

Federal Aviation Administration

U.S. Department
of Transportation

**Federal Aviation
Administration**

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## ABOUT THIS ISSUE…


The November/December 2024 issue of *FAA Safety Briefing* celebrates our readers' preferences in general aviation safety content by compiling a selection of our most-read articles over the last several years. This "Your Choice, Your Flight" issue covers a wide range of topics that continue to be relevant to aviation safety, and popular among readers, along with some important updates that you may find useful.

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FAA Safety BRIEFING

*The FAA Safety Policy Voice of Non-commercial General Aviation*








## DEPARTMENTS



LARRY FIELDS, FLIGHT STANDARDS SERVICE EXECUTIVE DIRECTOR

# THE GA SAFETY HIGHLIGHT REEL

As we wind down the end of 2024 and begin preparing for the holidays, it's important to reflect on what has been an exciting and productive year for aviation safety. This year brought about several regulatory changes that aim to enhance airman testing and training, as well as improve safety and efficiency in the National Airspace System (NAS). Among them is a final rule that incorporates the Airman Certification Standards (ACS) and Practical Test Standards (PTS) into the regulations (bit.ly/ACS_PTSrule), a rule that improves safety for passengers and crewmembers when using supplemental restraint systems (bit.ly/SuppRestraint), and a rule that removes the expiration date from flight instructor certificates (federalregister.gov/d/2024-22018).

We also saw the passing of the FAA Reauthorization Act of 2024 (bit.ly/FAAReauth2024), which contains several provisions specifically related to general aviation. These include an expansion of BasicMed, additional funding for GA airports under the Airport Improvement Program (AIP), and investments in workforce training and development to help bolster the next generation of pilots, mechanics, and air traffic controllers. The FAA is currently hard at work addressing these provisions.

Another milestone achievement was the outstanding safety record for general aviation in the first 11 months of fiscal year 2024. As of Sept. 2, 2024, the GA fatal accident rate was 0.69 per 100K flight hours, well below the 0.93 per 100K flight hour target. The experimental aircraft sector saw a similar downward trend, at 10 accidents below its target for FY24 at the beginning of September. While these numbers are still preliminary, we're on track to have


one of our safest years ever in GA! That's an incredible accomplishment and a direct reflection of your commitment to safety and professionalism. Of course, our vision is to have no accidents, but this is certainly a trend in the right direction.

To help round out this extraordinary year, we decided to celebrate your preferences in GA safety content by curating a collection of some of our most-read articles over the last decade. I would add that our readers have good taste in what's important. The selections in this reader's choice issue cover a wide array of topics that were — and continue to be — relevant to GA safety. The editorial staff has also included updates in each article to keep readers apprised of any recent changes or enhancements. Here's the list:

- ***ADS-B 101*** — This article, which appeared in the lead-up to the FAA's 2020 ADS-B Out mandate, covers what this game-changing technology is and what it means to you in the GA community. While most aircraft are now equipped with this life-saving technology, the article serves as an important opportunity to re-educate yourself on how ADS-B works, what's changed, and how to ensure that your equipment functions properly.
- ***How to Talk Like a Pilot*** — Proper communication in aviation is critical, and so should your approach to handling the mic during flight. This article provides several key pointers to help you sound like a pro and avoid some common radio pitfalls.
- ***Is My Aircraft Right for Flight?*** — This article emphasizes the importance of preflight preparation and takes a step-by-step approach to properly evaluate your aircraft before flight.
- ***Round Up the Usual Suspects*** — This article addresses the persistently consistent causes of GA safety mishaps and tips on how to avoid them.
- ***Is That My Runway?*** — Wrong surface operations happen more often than you might think and among pilots at all skill levels. This article looks at a host of strategies and tools to help keep you in the right place at the right time.

We hope you enjoy and find value in this issue's tribute to the journey we've taken together throughout the years. Stay tuned for more in-depth articles in future issues as we continue to explore the evolving landscape of aviation safety and strive to keep you informed and prepared for what lies ahead.

Here's to a safe and successful year ahead!

# AVIATION NEWS ROUNDUP

## New SAFO for Mass Aircraft Demonstrations at Aviation Events

On Nov. 12, 2022, a Boeing B-17G and a Bell P-63F collided midair during the Wings Over Dallas air show. A total of six people aboard the two airplanes were fatally injured in the crash. The two formations consisted of dissimilar aircraft operating near one another. The National Transportation Safety Board's (NTSB) preliminary report stated there were no altitude deconflictions briefed before the flight or while the airplanes were in the air. This accident highlights the complexity of mass aircraft demonstrations, and the critical importance of safety protocols to provide separation and enhance situational awareness.

The FAA published a Safety Alert for Operators (SAFO) to highlight this issue and remind the civilian air show community to ensure that appropriate, well-defined procedures are established when conducting mass aircraft demonstrations at air shows. A mass aircraft demonstration refers to multiple aircraft flying in trail or in formation within the flying display area. Mass aircraft demonstrations pose unique challenges and complexities in air show operations. These complexities and challenges include, but are not limited to, the following:

- Participation of dissimilar aircraft;
- Complex flight patterns (e.g. dog bone-shaped flight paths);
- Communication protocols, management, and requirements; and
- Number of aircraft involved.

The SAFO highlights several key risk mitigations that the FAA encourages all participants to implement. For more details, see the SAFO at bit.ly/4dXbX3k.

## From the Flight Deck Data Visualization Chart

The FAA's *From the Flight Deck* (FTFD) video series provides pilots with actual runway approach and airport taxiway footage captured with aircraft-mounted cameras, combined with diagrams and visual graphics to clearly identify hot spots and other safety-sensitive items at airports.

To help viewers find locations of the 130-plus videos, an interactive map was created on the FTFD landing page at faa.gov/flight_deck and was recently updated as a data visualization chart. This chart shows a map of the United States and includes filter and search options that let users customize their search by state, city, airport name, airport ID, and safety product to easily access FTFD videos and other content like Arrival Alert Notices.

The FAA has also expanded its runway safety outreach efforts beyond videos with corresponding digital content in the form of pilot handbooks for specific airports. These online documents convey much of the same safety information as the videos, including a section on specific cautions and local information that controllers want pilots to know.


**The FAA's new data visualization chart at faa.gov/flight_deck lets you filter and search for runway safety resources by state, city, airport name, airport ID and safety product.**

So, before your next flight, be sure to check out the FTFD resources available.

### Pilot Minute Video Covers Herbal Remedies

Pilots may wonder, "Why should I be concerned about herbal remedies?" Not all organic substances are safe, and some can have similar effects to those of illicit drugs. In a recent episode of the *Pilot Minute* video series, Federal Air Surgeon Dr. Susan Northrop explains the herbal remedies and supplements that are not acceptable for medical certification including specific concerns for aviation safety. Go to bit.ly/FAAPilotMinute to watch this and other *Pilot Minute* videos.

### Lose the Laser

With the holiday season in full swing, people will see more laser light decorations in use around town and in their neighborhoods. While these may add some visual interest and fun to holiday décor, they are not fun in the flight deck.

Laser light displays pose a potential threat to pilots in aircraft above. When pointed at the sky, laser strikes on airplanes and helicopters can temporarily blind pilots, putting lives at risk in the aircraft and on the ground below. Watch the FAA's video on home laser lights at youtu.be/4s1hw-T-KR4.

Even though lasers may seem harmless, pointing one at an aircraft is a federal crime because of the hazard they present. U.S. law enforcement agencies and the FAA may seek criminal and civil prosecution against violators, including significant fines and jail time.


**Check out the FAA's YouTube video "Lose the Laser" at bit.ly/3XOeGGM.**

For more information on the dangers, data, and how to report aircraft laser strikes, visit faa.gov/go/lasers.

### Paving the Way for Expanded Nationwide Drone Package Delivery

In a first for U.S. aviation, the FAA has authorized multiple commercial drone operations in the same airspace. The authorizations for Zipline International and Wing Aviation allow them to deliver packages while keeping their drones safely separated using Unmanned Aircraft System Traffic Management (UTM) technology. In this system, the industry manages the airspace with rigorous FAA safety oversight.

Typically, when operating drones, the operator must be able to always see the aircraft. However, new advancements in air traffic technology and procedures are providing a key step toward making these beyond visual line of sight (BVLOS) flights routine.

This comes as the FAA works to release the Normalizing UAS BVLOS Notice of Proposed Rulemaking (NPRM), which would enable drone operators to expand operations while maintaining the same high level of safety as traditional aviation. We are on track to release the NPRM this year, following strong Congressional support in the recent FAA reauthorization.

Drones represent a very different type of aircraft than traditional commercial aviation, and the FAA's approach to this new NPRM has evolved accordingly. The industry has created the market and technology, and the FAA has worked with them on creative solutions to ensure operations can be done safely — UTM services are a clear example of this innovative approach. The NPRM has been designed to allow operations to scale with the size of the industry.

For more information on this milestone, visit bit.ly/3XDn9we.

### NTSB Safety Alert: Flying in Icing Conditions

Flying in icing conditions can present operational risks, including the adverse effects of airframe and propeller icing on aircraft performance. This can make managing the airplane's flightpath and airspeed more difficult and prevent the airplane from maintaining a level flight.

To address this issue, the NTSB issued Safety Alert 097, which provides recommendations like activating leading-edge deice boots and pitot heat and maintaining the recommended airspeed for flight in icing conditions in accordance with the Aircraft Flight Manual or Pilot Operating Handbook. Additionally, there are products available that can be used on deicing boots to enhance deicer performance and help shed ice more easily.

For additional information and to view all the recommendations in this safety alert, visit bit.ly/NTSBSA.

## #FLYSAFE GA SAFETY ENHANCEMENT TOPICS

**Please visit bit.ly/FlySafeMedium for more information on these and other topics.**

**NOVEMBER**

**Overreliance on Automation:**
Learn how overreliance on automation technology can inhibit terrain awareness.

**DECEMBER**

**Flight Data Monitoring:**
Learn about the safety benefits of flight data monitoring and how it can help identify emerging problems before failure.

DR. SUSAN NORTHRUP, FAA FEDERAL AIR SURGEON

# YOUR CALL ANSWERED

Many of you know that we maintain a call center in Oklahoma City at the Civil Aeromedical Institute (CAMI) and staff the regional flight surgeons' offices to answer questions. For this issue, I thought I would review the most common questions these offices receive and perhaps save you a phone call.

**Why is my medical review taking so long?** This has multiple components. First, the number of applications increased 18% between 2017 and 2023. Second, the complexity of cases has also increased with a much greater percentage requiring review and special issuance by the FAA prior to approval. Third, the FAA is aggressively hiring new controllers. Some of the same personnel who review cases from pilots also review the medical applications of controller candidates. To be blunt, our staffing levels have remained relatively level while the workload has increased dramatically. However, we are taking steps to improve this. For several years, we have worked very hard to identify which conditions we could delegate decision authority to an aviation medical examiner (AME). As I discussed in the last issue, this has already reduced the wait for some conditions. In addition, we recently received approval to hire more personnel, both physicians and administrative assistants, so much-needed help is on the way. The first individuals are already hired and are now in training. However, it takes a few months, at a minimum, for someone to be fully trained even with an aviation medicine background.

**What can I do to speed up the process**? Quite a bit, actually. First, ensure that the information you send us is exactly what we request. For example, if it's requested, you must send the actual physician's progress notes. This may be different than what you can pull up in your chart or the after-visit summary you receive. This also applies to requests for specific tests. While sometimes we can accept a substitute test, you should always ask rather than assume. Ask your AME to upload the records electronically when feasible (there are currently size limitations that we are seeking to increase). If you do send hard copies, mail them in a single mailing. Please do not send duplicate copies; duplicates slow the process down. Regardless, please ensure that all the records are legible. Make sure that you have disclosed all conditions and that these are addressed appropriately. Unfortunately, it is not uncommon for someone to neglect to mention a condition even though it is listed in the problem list or by another treating physician. You may want to review the problem lists off our medical records with your AME to see if any of those conditions require documentation for the FAA. We are required to ask about these additional conditions.

**How long does it take the FAA to review records**? This depends on the condition. Factors include the complexity of the underlying condition(s), the specific condition(s), if an outside consultant review is needed, and if during the review we discover additional conditions that must be addressed. Some conditions are clearly disqualifying and we can render a decision quickly. The goal for us though is to find a pathway to "yes" and issue a certificate when it is safe to do so. Remember, obtaining the correct documentation is often the most time-consuming part of medical certification, so be sure to include everything requested.

**Can the call center staff tell me where I am in the queue?** No, we do not maintain a dashboard that shows this information. However, they can tell you if we have received your information and if we have everything that we requested. If an extension is needed to complete the evaluation, they can grant this as well. This extension does not extend the duration of the medical certificate though. This is governed by 14 CFR section 61.23. Call center staff can also assist the airman with a request for a recent authorization letter or information request letter; sometimes these are lost in the mail. For duplicate certificates, the airman can obtain the needed form at bit.ly/3N3FA72.

**Can I come there and drop off my paperwork or talk to the reviewer or doctor?** No, FAA facilities are secure, and physical access is limited. Your documents can be uploaded electronically by your AME, mailed by USPS, or sent via FedEx, UPS, or USPS priority. The addresses are located on the FAA medical website at bit.ly/4gttnGt.

One final suggestion: the AME Guide has a wealth of information that you might find useful even though the AMEs are the primary audience. We update it regularly, and it is now over 800 pages long. We have an integral search engine, but you can also use your favorite online search engine. You can find the Guide at faa.gov/ame_guide.

# ADS-B 101

## What It Is, and What It Means to You


*By the FAA Surveillance and Broadcast Services Group*

*Editor's Note: This article first appeared in the Mar/Apr 2017 issue of* FAA Safety Briefing. *We've made several updates to the original article to reflect pertinent program changes and offer some pilot feedback after the 2020 mandate. This article also provides the FAA with an important opportunity to help re-educate the pilot community on the many benefits of ADS-B technology.*

As the demand for our nation's airspace grows, Next Generation Air Transportation System (NextGen) improvements are helping to guide and track aircraft more precisely and on routes that are more direct. The shift to smarter technologies is making air travel safer, more convenient, and more environmentally friendly.

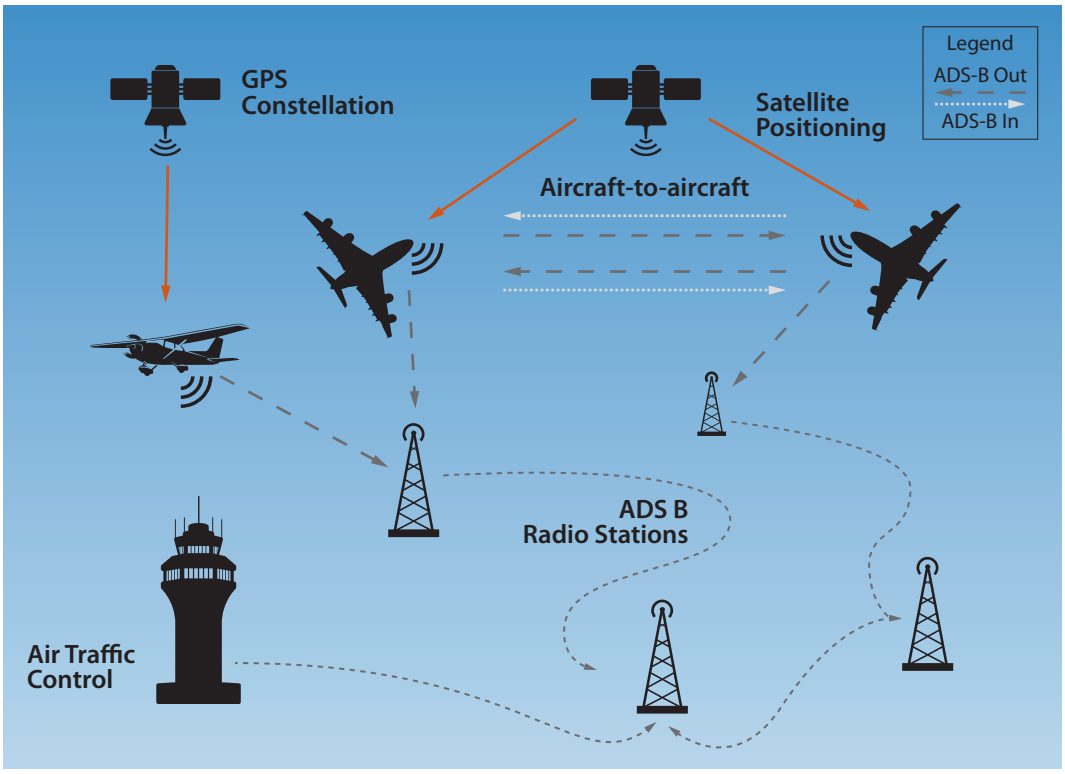
Automatic Dependent Surveillance-Broadcast (ADS-B) is a foundational NextGen technology that uses GPS information to track aircraft in real time and improve situational awareness. Nearly five years since the FAA's ADS-B mandate, this technology is well on its way to achieving its objective: to increase safety and efficiency in the National Airspace System (NAS) and help meet the demand of increasing air traffic levels.

ADS-B has the following characteristics:

- It's **Automatic** — It transmits location and other information, every second (vs. transponder every 5 to 12 seconds), with no pilot action.
- It's **Dependent** — It is dependent on aircraft being equipped with a rule-compliant position source and signal transmitter.
- **Surveillance** through GPS information — The signal includes aircraft position and velocity vector derived from the position source, which is typically a GPS receiver. Position accuracy is independent of the distance from the ground station.
- **Broadcast** of the aircraft's position — ADS-B equipment automatically transmits data to controllers and to any aircraft equipped to receive ADS-B. ADS-B targets display in real time.

### How Does ADS-B Work?

ADS-B works by having aircraft avionics regularly broadcast position, velocity, and identification information




ADS-B system components include the GPS constellation, ground stations, ATC, and aircraft with ADS-B equipment.

from an aircraft to air traffic control (ATC) and other aircraft that can receive ADS-B data. Accurate position data, along with the velocity of the aircraft, is derived from satellite navigation signals received by the aircraft's position source. ADS-B avionics integrates this information with data obtained from other aircraft sources (e.g., flight management system, altimeter, and traffic collision avoidance system (TCAS) units) to generate a comprehensive data set for the aircraft. This data is transmitted by ADS-B avionics on one of the approved ADS-B datalinks (more on that in the ADS-B Mandate section) at a rate of once per second or better. It provides frequent updates for tracking aircraft movements and determining state changes of the aircraft. This transmission is referred to as ADS-B Out. Aircraft within line of sight that are equipped to receive the data receive these broadcasts, along with ADS-B ground stations up to approximately 250 miles away. The ADS-B ground system then processes this data and displays it to ATC for use in providing separation services to aircraft.

The ADS-B system combines other surveillance data (e.g., radar, wide area multilateration, etc.) for non-ADS-B-equipped aircraft, and subsequently transmits this information from ground stations to ADS-B-equipped aircraft as Traffic Information Service-Broadcast (TIS-B), a free ADS-B In service that significantly enhances pilot situational awareness for additional safety benefits. With traffic displayed in the cockpit, pilots and air traffic controllers can communicate with shared awareness of conflicting aircraft traffic. With TIS-B, a pilot will not only see ADS-B air-to-air traffic but also the radar targets sent from ground stations, resulting in a more complete picture of traffic around the aircraft.

TIS-B information is available to aircraft that broadcast valid ADS-B Out and utilize ADS-B In on the universal access transceiver (UAT) link (978 MHz), 1090 Extended Squitter (1090MHz) link, or both. ADS-B ground stations also send out, on the UAT link only, graphical weather information and flight information, such as temporary flight restrictions and notices to air missions at no cost. This is called Flight Information Service-Broadcast (FIS-B). For more information on ADS-B In applications, go to bit.ly/4dA1vxR.

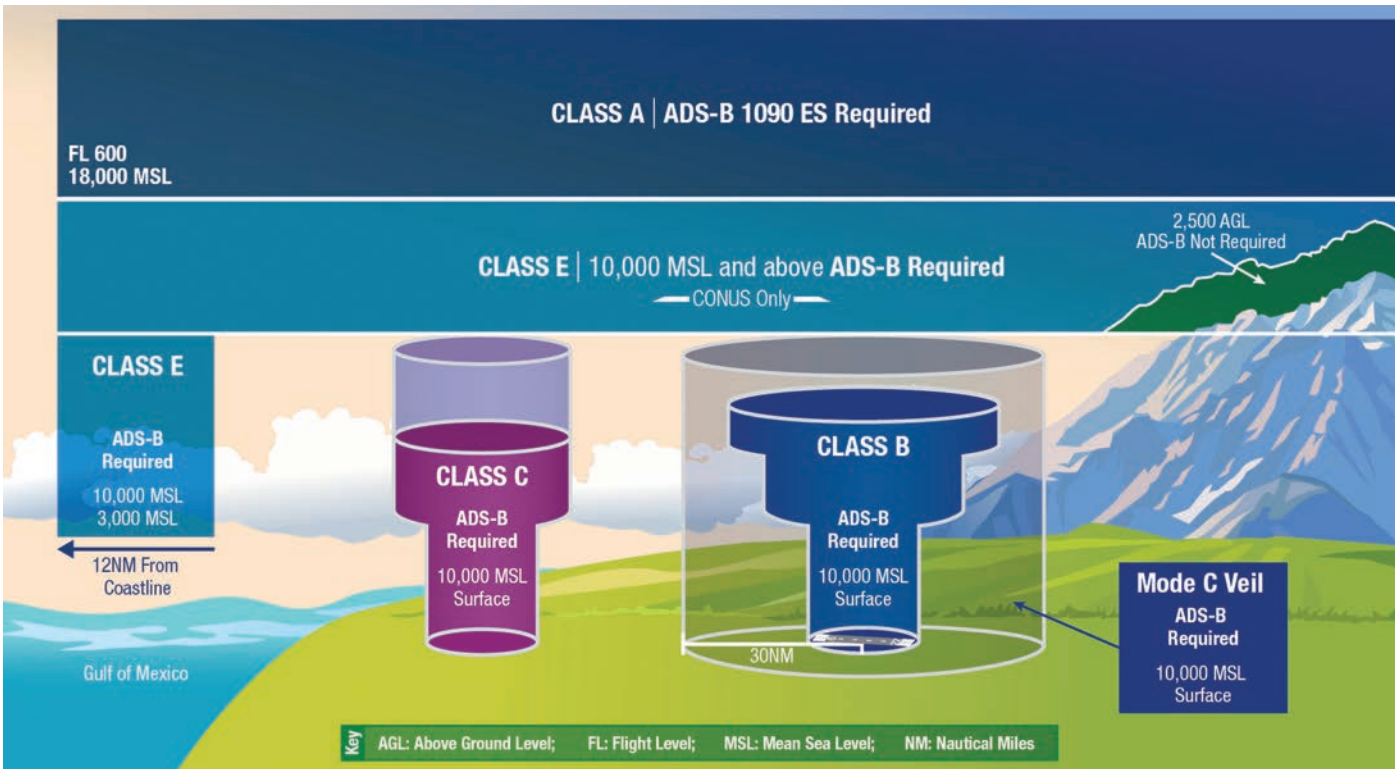
## ADS-B Mandate

The equipment used to broadcast ADS-B Out was mandated by Jan. 1, 2020, for aircraft flying in certain airspace — generally the same busy airspace where transponders are required (see Title 14, Code of Federal Regulations (14 CFR), section 91.225).

Except for airspace along the coast of the Gulf of Mexico, if a pilot flies exclusively in airspace where a transponder is not required, then there is no mandate to equip. Also exempt, in some airspace, are aircraft not originally certificated with an electrical system, or not subsequently certified with such a system installed, including balloons and gliders. Additional details on ADS-B airspace requirements can be found at faa.gov/go/ADSBairspace.

Deciding which type of ADS-B equipment you need is based on where you fly. Aircraft operating above FL180 (18,000 feet) or internationally, must be equipped with a Mode S-transponder-based (1090 MHz) ADS-B transmitter. Aircraft operating below 18,000 feet and within

**Regulation Reminder:** All ADS-B equipped aircraft are required to operate their ADS-B Out transmitter **at all times** including while on the surface of the airport — 14 CFR section 91.225(f).




**This graphic generally depicts the airspace where ADS-B Out is required. Visit faa.gov/go/ADSBairspace for more information.**

ADS-B rule airspace must be equipped with either Mode S transponder-based (1090 MHz) ADS-B equipment or UAT equipment. UAT equipment provides the ability to receive traffic and weather data provided by the FAA ADS-B network. View the FAA's decision tree for help on how to equip with ADS-B at bit.ly/doIneedtoequipADSB.

To meet the minimum requirements for ADS-B Out, an aircraft must be equipped with three things:

1. A qualified Global Navigation Satellite System (GNSS) receiver (see FAA Advisory Circular 20-165B, Appendix 2)
2. An extended squitter Mode-S transponder or a UAT meeting the performance requirements of TSO-C166b or TSO-C154c
3. Appropriate antennas

Note that portable equipment *does not* meet the ADS-B Out rule requirements.

Owners can install an ADS-B Out system to meet the minimum requirements of the rule, or they can also integrate with ADS-B In avionics and displays to reap the full benefits of ADS-B. Since the advantages of ADS-B In are so extensive, many in the general aviation (GA) community have chosen to invest without an ADS-B In mandate.

## Benefits for General Aviation

ADS-B is transforming all segments of aviation, and GA pilots in equipped aircraft now have access to services that provide a new level of safety and efficiency.

ADS-B provides 21% more airspace coverage than radar at 1,500 feet above ground level in the contiguous U.S. and Hawaii. GA and air taxi aircraft equipped with ADS-B Out enjoy more efficient spacing and optimal routing in non-radar environments, including the busy airspace in the Gulf of Mexico, mountainous regions of Colorado, and the lower altitudes of Alaska.

The precise surveillance provided by ADS-B also improves life-saving search-and-rescue operations. Air traffic controllers tracking aircraft with ADS-B Out have much better information about the last reported positions and velocity, helping to take the "search" out of search and rescue.

"Owners who choose to add avionics and displays for ADS-B In are receiving truly transformative services," says Jamal Wilson with the FAA Surveillance and Broadcast Services Group. "With ADS-B In, general aviation pilots see much of what air traffic controllers see on their ATC display. Cockpit displays show the location of aircraft in the skies around them, creating an environment of shared situational awareness."

An example of ADS-B's life-saving potential recently took place in the skies of Alaska where a student pilot, maneuvering in his home field airspace, was alerted to another aircraft heading his way. Once it was clear that the aircraft was not

**Have a TIS-B, FIS-B, or ADS-B problem to report?**
**Go to faa.gov/air_traffic/technology/adsb/adsb_reports.**

altering course, the student pilot used the ADS-B In information to initiate immediate course deviation that prevented what would have been a mid-air collision.

## Your Path to Equipping with ADS-B

Throughout the country, GA aircraft owners are continuing to equip with ADS-B. As of July 2024, the FAA can detect that over 105,000 fixed-wing general aviation aircraft are equipped with rule-compliant ADS-B Out.

If you are unsure where to begin your path to ADS-B equipage, visit the FAA's Equip ADS-B website at faa.gov/go/equipadsb. This website was created to meet the needs of the GA community and includes an extensive amount of information such as frequently asked questions, an interactive map that shows rule airspace, current equipage levels, how to improve privacy, and an online form to report an issue or concern with TIS-B, FIS-B, or other aspects of the ADS-B system.

## If You've Already Equipped

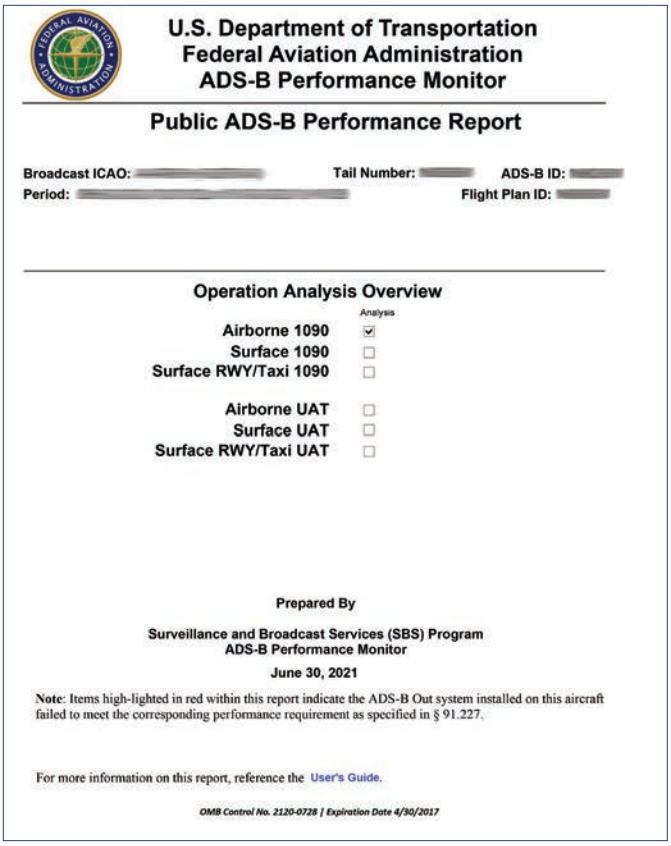
As noted previously, many GA pilots have already equipped with ADS-B, but following equipage there is more that pilots need to know. First, once an aircraft has been equipped with ADS-B Out or after a new aircraft has been purchased, it's important to check the ADS-B system's performance. The FAA recommends that aircraft owners and operators check their equipment's performance after installation and periodically afterward, particularly after any aircraft maintenance is performed since avionics performance can change over time.

Requesting a Public ADS-B Performance Report (PAPR) is the best and easiest way to determine whether ADS-B equipment meets all the requirements of 14 CFR section 91.227. A PAPR can be requested as often as desired after any flight. Just visit faa.gov/go/adsbpapr.

It's also important for pilots to ensure that the flight ID broadcast by their ADS-B Out equipment exactly matches the aircraft ID (call sign) used on the flight plan. If the ADS-B flight ID does not exactly match the aircraft ID provided on the flight plan, it creates a call sign mismatch (CSMM) event. CSMM mitigation efforts by air traffic controllers, especially in busy airspace, can lead to significant operational difficulties, including distraction, increased frequency congestion, and increased workload.

To avoid call sign mismatch, pilots can verify that their flight ID is set correctly by requesting a PAPR Report. This is important after any maintenance activity, especially when the battery is disconnected, as this activity may reset the flight ID field.

For ADS-B Out transmitters with a pilot-changeable flight ID, the FAA recommends having a standard procedure for checking that the correct flight ID is entered prior to taxiing. Also, if your organization assigns an ICAO three-letter flight ID for a particular mission (e.g., Angel Flight), be sure the flight ID is entered correctly in the ADS-B prior to taxiing and remember to change the flight ID back to the "N number" after the mission is completed.



U.S. Department of Transportation
Federal Aviation Administration
ADS-B Performance Monitor

Public ADS-B Performance Report

Broadcast ICAO: [redacted] Tail Number: [redacted] ADS-B ID: [redacted]
Period: [redacted] Flight Plan ID: [redacted]

Operation Analysis Overview

| | Analysis |
|---|---|
| Airborne 1090 | ☑ |
| Surface 1090 | ☐ |
| Surface RWY/Taxi 1090 | ☐ |
| Airborne UAT | ☐ |
| Surface UAT | ☐ |
| Surface RWY/Taxi UAT | ☐ |

Prepared By

Surveillance and Broadcast Services (SBS) Program
ADS-B Performance Monitor

June 30, 2021

Note: Items high-lighted in red within this report indicate the ADS-B Out system installed on this aircraft failed to meet the corresponding performance requirement as specified in § 91.227.

For more information on this report, reference the User's Guide.

OMB Control No. 2120-0728 | Expiration Date 4/30/2017

**Requesting a Public ADS-B Performance Report (PAPR) at faa.gov/go/adsbpapr is the best and easiest way to determine whether ADS-B equipment is functioning properly and meets all the requirements of 14 CFR section 91.227.**

Additional details that are important for pilots to know about their ADS-B system are available on the Equip ADS-B webpage at bit.ly/KnowYourADSB.

"We've come quite a way since the first publication of this article in 2017," says Jamal Wilson. "As pilots, we can now reflect that the 2020 mandate wasn't the end; it was actually just the beginning of realizing the benefits of ADS-B."

**The FAA Surveillance and Broadcast Services (SBS) Group leverages Automatic Dependent Surveillance-Broadcast (ADS-B) technology to enhance capabilities for airspace users and controllers, while improving safety and efficiency in various phases of flight.**

### LEARN MORE

FAA's Equip ADS-B webpage
**faa.gov/go/equipadsb**

FAA's ADS-B Resource webpage
**faa.gov/air_traffic/technology/equipadsb/resources**

# How to Talk Like a Pilot

## *The Basic Elements of Aviation Communication*

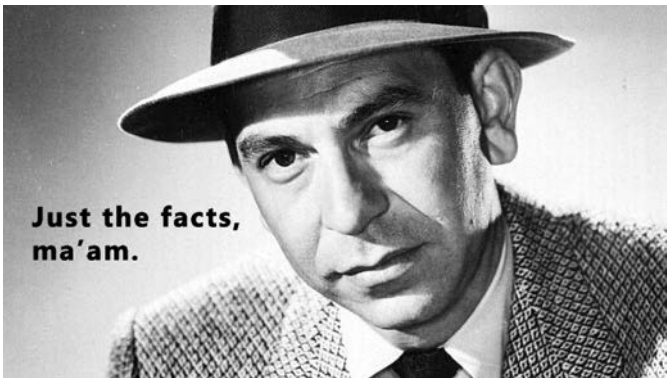
*By Jennifer Caron*

*Editor's Note: This article originally appeared in the Jan/Feb 2018 issue of* FAA Safety Briefing *and was updated for this issue.*

Have you ever seen the 1960s television series *Dragnet* with Sgt. Friday? He was a no-nonsense detective who did everything by the books. A "just the facts" gumshoe, Joe Friday took his job seriously and was always professional and precise.

Sgt. Friday was no gabby blabbermouth who talked a lot just to hear himself speak. No, sir! He spoke in concise, fact-based, monotone dialogues:

"This is the city: Los Angeles, California. I work here. I'm a cop."




Even if you've never seen the show, you already know where it takes place, who Joe Friday is, and what he does — in just four short phrases. It's clear, concise, and to the point. He gave you "just the facts, ma'am." That's all the information you need for situational awareness.

Let's take this cue from Sgt. Friday as we consider the basic elements of aviation communication.

### Be Concise, but Be Precise

Brevity is important in "aviation-speak," but precision and understanding are key. Your radio transmissions should be as concise as possible while still ensuring that the controller understands what you want to do. Equally important is for you, the pilot, to understand exactly what ATC wants you to do. This principle also applies to non-towered airfields. Radio calls to the Unicom frequency should be as brief as possible to shorten your time on air, but they must also be accurate to help you and other pilots see and avoid. Here are a few tips:

**Write Everything Down.** Get into the habit of writing down ATIS information, taxi instructions, and ATC clearances. This is especially helpful for instructions that are complex. Write down basically everything you'll need to read back to the controller.

Here's why. The act of writing information confirms

what you think you heard. It reinforces your understanding of what you need to do, and it allows you to plan what to say before you say it. It also helps reduce the possibility that you'll forget part of the instruction and have to request "Say again?" to get it right.

Take advantage of the sequence that ATC uses to issue IFR clearances and use the **CRAFT** acronym to jot down your clearance instructions in the order they're given — **C**learance limit, **R**oute, **A**ltitude, **F**requency, and **T**ransponder code.

With your notes in front of you, you can speak clearly, confidently, and without pauses ("ums and ahs") or hesitation. Your notes will also allow you to cut out excess verbiage and shorten up your readbacks to "just the facts." "Runway 25" can be shortened to "25," for example.

Don't get sloppy. Make sure you read back ALL of the facts. Don't shorten "taxi to runway 25, via taxiway Hotel, hold short 27," into "taxi to 25 hold short 27!" You have to acknowledge that you know a taxiway route is required to reach your destination.

At non-towered fields, many pilots will use the jargon, "*taking the active,*" when they're about to move onto the runway. It may sound cool, but it's not. Non-towered fields do not have an "active" runway and, more importantly, such transmissions convey no useful information. Transmit *"departing 27"* instead so your fellow aviators will know which runway is in use.

**Taxi Diagrams Serve a Purpose. Use Them.** You can jot everything down on your taxi diagram, either with traditional pen and ink or by using the annotation features in most popular aviation apps. Get into the habit of drawing out the route you're instructed to take right onto your taxi diagram. Do this even at your home airport, and for every flight. This best practice verifies your assigned route and confirms accuracy. It will help you think about what you want to say before you key the mic, and it will also help you avoid runway incursions.

> **Brevity is important in "aviation-speak," but precision and understanding are key. Your radio transmissions should be as concise as possible while still ensuring that the controller understands what you want to do.**

**Use Your Call Sign.** Every time you transmit, identify

your aircraft by its call sign — which is your aircraft's type, model, or manufacturer's name, followed by the digits/letters of the FAA registration number, aka tail number. Call sign aircraft identification is a mandatory requirement by the FCC (the body that governs radio communications). That said, you can certainly add concise information about color or paint scheme in busy, non-towered airspace (or, as requested, at events like air shows) to help other pilots spot you quickly.

Once you have established two-way radio communication, it's common for ATC to abbreviate call signs on subsequent communications by using just the aircraft prefix and the last three digits/letters of its registration. Once the controller has used such abbreviations, you can follow suit.

## Aim for Professionalism

Take all your radio calls seriously. You are a certificated, professional pilot, and just like Sgt. Friday, you should take a no-nonsense, disciplined approach to your transmissions. Always strive to use standard phraseology. Manage the mic. Make sure it's not stuck in the transmit position. Do not

transmit just to transmit. For heaven's sake, please do not use the frequency for personal conversations.

For non-towered airfields, take into account that a Common Traffic Advisory Frequency (CTAF) may be shared by several airfields. Always begin and end your transmissions with the airport name. Self-announced radio calls or Unicom advisory requests are intended to enhance

situational awareness.

"It drives me nuts when pilots say 'any traffic in the area, please advise,'" says Sarah Patten, Air Traffic Control Specialist at FAA Potomac TRACON and active pilot. "It's my biggest pet peeve." She adds that "by asking any traffic in the area to advise, they're inviting every plane to key up at the same time, resulting in an unreadable squeal, and they're also not accounting for any aircraft in the area that may not have a radio. The airport I fly out of, for example, has quite a few of these," Patten explains.

"A better option for pilots might be to use a second com radio to monitor the CTAF," suggests Patten, "and to recognize that it's always important to scan for traffic no matter where you're flying." Patten adds that it is important to monitor the CTAF in the vicinity of airports. "By assuming that everyone in the area is talking on the radio, it's easy to get complacent with traffic scanning, which can lead to some nasty surprises," cautions Patten.

Lastly, don't announce your every position or action, only the ones that prevent conflicts in flight, the traffic pattern, or during taxi. Some airports, especially ones that share a congested frequency, desperately need pilot discretion when making radio calls. Keep in mind that all communication frequencies are typically a party line, and only one person can talk at any one time.

Remember — effective pilot/controller communications are key to safe operations. Here's a few resources you can use to improve your radio technique.

1. **Learn the Lingo.** Pilots will find the Pilot/Controller Glossary very helpful in learning what certain words or phrases mean. Good phraseology is concise, it's accurate, and it's the mark of a professional pilot. Jargon, chatter, gabbiness, and slang have no place in proper, professional ATC communications. All pilots can benefit from reviewing the P/C Glossary from time to time to sharpen up phraseology and technique. You'll find a copy of the Glossary here: bit.ly/PilotControllerGlossary.

   If your aircraft is hibernating for the winter or you haven't flown in a while, stay sharp by listening to liveatc.net, the live feed of ATC communications. It's a great way to listen to the way controllers speak, keep up on the lingo, and pick up a few phrases you didn't know as you wait for spring.

2. **Review the AIM.** The FAA *Aeronautical Information Manual* (AIM) is your one-stop, back-to-basics guide for flight information and ATC procedures. You'll want to check out Chapter 4 on Air Traffic Control and Section 2 of that chapter on radio communications, phraseology, and technique. The AIM is updated every six months so visit faa.gov/air_traffic/publications to make sure you have the most up-to-date version.

3. **Listen Before You Transmit.** Many times, you can get all the information you need on the active runway just by listening to ATIS. Likewise, when you're switching frequencies, stop, listen, and make sure it's clear you're on the right frequency before you start transmitting. You also want to avoid "stepping on" another pilot who is already transmitting when you join the frequency.

   "Pilots should listen not only to hear if someone is talking before they key up, but should also listen to what is being said," advises Patten. "I can't tell you how many times I've issued an instruction to a plane, only to have someone else immediately check in before the first plane can read back the instructions. That makes it harder for me to verify that the first plane received my instruction, and frequently creates more work for both the pilot and the controller," says Patten.

   Likewise, if you're instructed to monitor a frequency, do just that and listen only. The controller will initiate contact as needed.

   When you have a non-urgent request, a good practice is to let ATC know by transmitting your call sign with the word "request." The controller will acknowledge and let you know when he or she has the opportunity to listen.

**Get into the habit of writing down ATIS information, taxi instructions, and ATC clearances.**

## Be Courteous and Keep it Classy

Effective communication is the critical link between pilots and controllers in the air traffic control system. Always be factual, accurate, brief, professional, polished, and courteous in all your radio transmissions. These are the basic elements of proper aviation communication and are the keys to ensuring a strong bond between you and the controller. Practicing and perfecting these basics will not only enhance safety for you, but for all users in the airspace system.

**LEARN MORE**

AIM's Pilot/Controller Glossary and Radio Communications Phraseology and Techniques (Chapter 4, Section 2)
**faa.gov/air_traffic/publications/**

FAASTeam Radio Communications Phraseology and Techniques
**bit.ly/CommsPhraseology**

From the Flight Deck — Phraseology
**bit.ly/3FYZgFX**

"Don't Get Lost in Translation," *FAA Safety Briefing*, Nov/Dec 2012, Page 20
**adobe.ly/3Zsk97e**

# Is My Aircraft Right for Flight?

## *The Importance of Preflight Prep*

***By Jennifer Caron***

*Editor's Note: This article originally appeared in the Jan/Feb 2017 issue of* FAA Safety Briefing *and was updated for this issue.*

What's that weird noise? I think to myself as I prepare for departure. I just finished my run-up, ready for take-off, and there it is again — that deep knocking sound — three times now — "knock, knock, knock." But I just shut this airplane down 30 minutes ago — quick stopover, I needed a break. Now I'm running late, so I skipped the preflight check completely. But I always do a full run-up on every start-up, so it should be good to go without a preflight check, right?

Don't leave anything to chance. In 2017, when this article was first published, 384 people died in 238 general aviation accidents. In 2022, 358 people died in 222 general aviation accidents. As you can see, the numbers have not changed much over the years. Powerplant system and component failure was the third most common event for fatal accidents, and maintenance errors were not to blame. Inadequate preflight preparation was cited as a contributing factor in many of these accidents.

### "A" in PAVE

Preflight preparation of your aircraft is one of the most important steps you can take to ensure that your aircraft is fit for flight. It is a critical function of the "A" in the personal minimums PAVE checklist of **P**ilot, **A**ircraft, En**V**ironment, and **E**xternal Pressures. It is one of the tools pilots use to assess the risk of a flight by evaluating the presence of risk factors in each of these four areas.

The PAVE checklist works like any checklist you would use in your aircraft. You should expand its use to your flight planning as well and consider each line item carefully before making your final decision to fly.

To help with the **"A"** in PAVE, I've highlighted some simple steps you can take to evaluate your aircraft prior to takeoff.

***Step 1 — Is it Airworthy?*** To be airworthy and safe to fly, the aircraft must meet two primary conditions. First, it must conform to a type design. Second, it must be in a condition for safe flight.

### Type Design

An aircraft must conform to its type design, which includes not only its equipment but also *documented* compliance with all required maintenance inspections. The type certificate data sheet (TCDS) for the aircraft provides a formal description of the aircraft, engine, or propeller, along with limitations and information on items such as airspeed, weight, and performance limits.

## Condition for Safe Flight

To be in a condition for safe flight, all required and installed equipment must be in good working condition. Any repairs and modifications must be correctly documented. Your aircraft needs an FAA Form 337 any time it has undergone a major repair or major alteration, as any changes to type design require approval through a supplemental type certificate (STC) that documents the FAA's approval of a product (aircraft, engine, or propeller) modification.

Additionally, your aircraft must meet the requirements of certain inspection cycles. You should be able to find aircraft maintenance log entries for completion of the annual or (if applicable) 100-hour inspection, which includes verification of any applicable airworthiness directives and any required equipment checks (e.g., the VOR and altimeter/pitot-static system, the transponder, and the emergency locator transmitter (ELT) battery strength). If you are flying a rented aircraft, always remember to note when the next inspection is due. For instance, are you planning a six-hour flight on an aircraft that only has three more hours until its 100-hour inspection is due? Ensuring that flight duration will not exceed the next aircraft inspection is part of the preflight for rental aircraft.

After maintenance, check systems thoroughly, or ask qualified maintenance personnel to help re-inspect the aircraft to ensure all systems are a go.

***Step 2 — Is it My Type?*** Know your experience level flying that particular aircraft type and your aircraft's performance abilities and limitations.

***Step 3 — Gas in the Tank?*** Know your fuel reserves.

***Step 4 — Checklist Checked?*** Preflight checklists are your friends — use them! It is important for you, as a safety-minded pilot, to make use of a physical preflight checklist. Never work from memory. In this way, you can ensure that you do not skip or misevaluate the items you are checking. Always exit the aircraft and move around it methodically, avoiding interruptions and distractions during your external inspection.

Go one step beyond the official checklist items and develop an additional items checklist to be used in conjunction with the aircraft's preflight checklist. Take a look at the FAA Safety Team's (FAASTeam) advanced preflight pamphlet at bit.ly/3DF7xid (PDF) for guidance on developing an additional items checklist to add to your preflight arsenal.

## Bring Your "A" Game

Another way to check your "**A**"ircraft, and to proactively assess risk for a given flight, is with a Flight Risk Assessment Tool (FRAT). A FRAT helps pilots make better

go/no-go decisions by asking a series of questions that generally follow the PAVE checklist. There is an abundance of FRAT options to choose from, they are simple to use, and many are available as apps on your smartphone or tablet. Check out "Introduction to Safety Risk Management" — the January 2023 Fly Safe GA Safety Enhancement Topic at bit.ly/47u0k1e.

### Remember This

With safety in mind, following proper preflight procedures plays a critical role in ensuring the airworthiness of your aircraft prior to takeoff. The steps you take before your aircraft leaves the ground will pay huge dividends towards your piece of mind while in the air.

And that weird knocking sound we heard earlier? Well, that was just your aircraft reminding you to do a thorough preflight check. Fly safe!

Jennifer Caron is a former assistant editor for FAA Safety Briefing.

**LEARN MORE**

"Advanced Preflight, Take Your Preflight to the Next Level," *FAA Safety Briefing* Mar/Apr 2012
**bit.ly/3MSMIIR (PDF)**

Advanced Preflight M-Pamphlet
**bit.ly/3DF7xid (PDF)**

Advanced Preflight after Maintenance Flyer
**bit.ly/47B4u7S (PDF)**

FAASTeam Safety Materials
**bit.ly/FAAST_pamphlets**

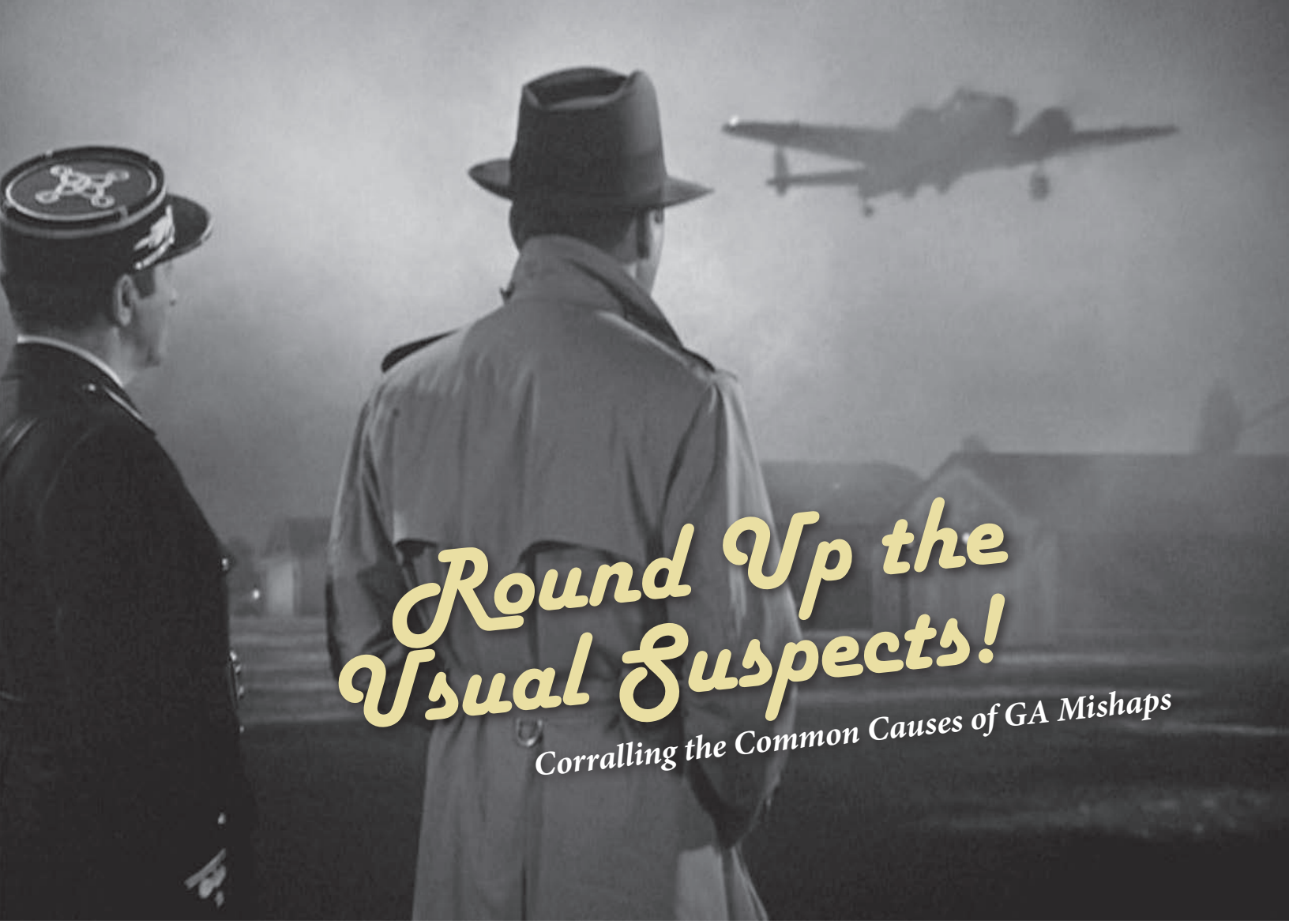
## Perfect Your Preflight

Advanced preflight is a practice that helps aircraft owners and pilots become more aware of all the safety-related data pertaining to their aircraft. In addition to using the preflight checklist, it focuses on being more cognizant of who maintains your aircraft and how to apply a detailed approach to your preflight inspection based on a review of the aircraft's maintenance history. Knowledge of your aircraft's history, its systems and components, and its propensity for possible failures is the foundation for this. To build on this foundation, it's crucial to get to know your aviation maintenance technician (AMT). Building a relationship with your AMT will help you do more than just learn about your aircraft. It will also help you feel more comfortable asking questions that help you know your AMT is qualified and has the proper experience, and pointing out items you are unsure of or need corrective action.

Equipped with better knowledge of your aircraft and who is maintaining it, you're ready for the practical application of an advanced preflight: the walk-around inspection, which is likely your last chance to determine the safe operational condition before a flight. When conducting your inspection, assume that there is something wrong, even if you used the best mechanic. Here are some important ways to perfect your preflight:

- Start your inspection with the manufacturer's checklist if available. This should form the basis of your preflight inspection, but don't limit yourself to it. Every aircraft is unique, so your checklist should be too.
- Get to know your checklist. Figure out not just what it asks you to "check" but also how you should "check" it. Sometimes, this involves interpreting visual, aural, and tactile cues, looking for cracks, feeling for looseness or binding, or listing for abnormal sounds.
- Using all your senses and a notepad, write down anything that isn't right. Step back 10 to 15 feet and see if anything looks out of place. Be prepared to abort takeoff if something goes wrong or doesn't feel right.

Take the time to perfect your preflight. Enhancing your relationship with your aircraft's history and your mechanic are both critical components of an advanced preflight and can make the difference between a safe flight and your last flight.



# Round Up the Usual Suspects!

## Corralling the Common Causes of GA Mishaps

*Editor's Note: This article is based on a collection of articles from our Jul/Aug 2018 issue that featured a Casablanca theme. The articles have been updated and the original authors will be noted for each section.*

### Meet the Prime Suspects

*Susan K. Parson*

The collection of common causes for general aviation (GA) accidents and incidents is remarkably (maybe depressingly) consistent. The Aircraft Owners and Pilots Association (AOPA) Air Safety Institute's most recent Richard G. McSpadden Report (formerly the Nall Report) notes that a whopping 69% of causes of non-commercial fixed-wing accidents can be attributed to the action — or inaction — of the pilot.

The mix of specific pilot problems shifts; for example, the McSpadden Report notes that reductions in the number of takeoff/climb and descent/approach accidents were offset by increases in the number attributed to low-altitude maneuvering, weather accidents, and (sigh) fuel mismanagement.

It is also troubling that instructional flights are the second largest category of personal flying accidents. While the classic VFR-into-IMC scenario accounted for fewer than 5% of all accidents, these mishaps are deadly, with about 80% of weather accidents being fatal.

Though not usually fatal, runway incursions are another elusive member of the not-so-exclusive usual suspects club for GA mishaps. FAA statistics (faa.gov/airports/runway_safety/statistics) show a stubbornly static number of national runway incursions since 2019.

### Sleuthing for Solutions

*Susan K. Parson*

We'll take a look at each of these topics in this article. But while we borrow the immortal "round 'em up" words of Capt. Louis Renault, *Casablanca's* prefect of police, to talk about the causes, it's important to emphasize that we don't subscribe to his *post-hoc,* enforcement-centered methods of keeping order when it comes to airmen who make honest mistakes. Rather, the FAA's Compliance Program aims to get a steady flow of safety information we wouldn't otherwise have. We then work collaboratively with airmen to prevent accidents from occurring in the first place or, when prevention of the initial accident isn't possible, to find ways to keep similar accidents from occurring.


## Master of My Fate!

*Susan K. Parson*

When rounding up the usual suspects for GA accident causes, none may be higher on the "wanted" list than loss of control — especially loss of control in flight (LOC-I). LOC-I persists as the leading cause of fatal GA accidents in the United States and commercial aviation worldwide. Preventing LOC-I in GA has been one of the perennial perps on the NTSB's Most Wanted List of Safety Improvements in years past. While the NTSB retired the Most Wanted List concept in 2023, LOC-I is still a significant safety risk in GA.

The FAA's *Airplane Flying Handbook* defines LOC-I as "a significant deviation of an aircraft from the intended flight path [that] often results from an airplane upset." It observes that maneuvering is the most common phase of flight for general aviation LOC-I accidents while cautioning that LOC-I accidents can — and do — occur in all phases of flight. The handbook appears to state the obvious when it notes that preventing loss of control is the pilot's most fundamental responsibility; after all, what could be more important? With all the authority that the regulations (i.e., 14 CFR section 91.3) confer to the pilot in command (PIC), the expectation is that as PIC, you are indeed the master of your fate — and, of course, the fate of anyone who happens to be in the airplane you're flying.

The unfortunate reality is rather different. Far too often, performing maneuvers that should be well within the capabilities of a certificated pilot melts the "master-of-my-fate" mettle, and that happens even faster than in the *Casablanca* scene where Maj. Strasser's arrival blows Capt. Renault's blustery bravado to smithereens.

So, what to do?

When it comes to ideas on how to corral this particular cause, pretty much everyone agrees that appropriate training is a critical piece of the answer. Pretty much everyone also agrees with the sentiment that the FAA states in the *Airplane Flying Handbook*:

> *To prevent LOC-I accidents, it is important for pilots to recognize and maintain a heightened awareness of situations that increase the risk of loss of control. Those situations include: uncoordinated flight, equipment malfunctions, pilot complacency, distraction, turbulence, and poor risk management. Attempting to fly in instrument meteorological conditions (IMC) when the pilot is not qualified or proficient is a common example of poor risk management. […] To maintain aircraft control when faced with these or other contributing factors, the pilot needs to be aware of situations where LOC-I can occur; recognize when an airplane is approaching a stall, has*


*stalled, or is in an upset condition; and understand and execute the correct procedures to recover the aircraft.*

In an effort to address these concerns and others, the FAA worked with industry to improve and update our testing standards. The debate was robust and required extensive discussion, but today's practical tests benefited from the revamp. One of the primary concerns was that removing the requirement to test an applicant at what pilots like me learned as "minimum controllable airspeed," or MCA, meant that instructors would not bother to ensure that pilots are still trained and proficient at maneuvering near the critical angle of attack (AOA) — or, just as important, understand what happens beyond the stall warning.

Contrary to what you might have read or heard, the "MCA" task element never disappeared from the practical test requirements — after all, it is not possible to perform a full stall task required on the private pilot-airplane practical test without first passing through that flight condition. That said, to more clearly convey the expectation for evaluation of an applicant's ability to recognize airplane cues for an impending stall and a full stall, the FAA added a requirement for the applicant to "acknowledge cues of the impending stall and then recover promptly after a full stall has occurred."

Here's another way to think about the rationale for this approach to the slow flight and stall tasks:

- Slow flight — that is, flight at the airspeeds and configurations used in the takeoff/departure and approach/landing phases of flight — is a normal operation that should not be performed with continuous activation of the stall warning.
- Except in the case of a thoroughly briefed full stall maneuver, a pilot should always treat the stall warning as an "abnormal" situation, and promptly perform the stall recovery procedure.
- A pilot should always treat an unbriefed/unintentional full stall as an emergency situation and execute a prompt and correct stall recovery.

You have probably heard the cliché that one definition of insanity is doing the same thing over and over again while (somehow) expecting different results. We weren't making headway against LOC-I by testing pilots in a way that encouraged, indeed *required*, intentional disregard of the stall warning. So, it only made sense to try a new approach to putting this pesky perpetrator out of business.

## Maybe Not Today . . .

*Sabrina Woods*

Each year, the McSpadden Report provides a detailed analysis of GA accident data and safety trends. A look at the most recent finalized data from the report in 2021 indicates there were 938 non-commercial, fixed-wing accidents, with an overall lethality rate of 17.7%. More than 80% of the accidents that occurred in IMC were fatal, compared to 15% of those that occurred within VMC. As the preceding accident summaries demonstrate, flying VFR into IMC is still one of the most lethal causal factors for GA mishaps. For this reason, the NTSB has determined it to be a significant safety hazard for the GA community.

What stands out is that, unlike most of the other mishap causal factors, this particular rate of occurrence has remained stubbornly fixed — drifting between a 79% to 92% fatal accident rate for VFR into IMC over the last several decades. *Decades!* This is despite several significant upgrades in weather forecasting technology and a continued safety awareness effort focused on this subject. My research left me shocked and more than just a little concerned about why this particular phenomenon keeps occurring.

I have a couple of different theories to offer on how VFR into IMC can happen. I humbly present to you what I call

the "just around the river bend" bad idea; the "where'd everybody go?" gaffe; and the "there's no place like home" hot spot. Let me explain further. A pilot is flying along when the visibility starts to deteriorate. Instead of diverting from the undesirable condition or even just landing the aircraft, the pilot continues, thinking that clearer conditions might be just "around the river bend." Or worse, they rely on the latest weather app to "shoot the gap" and try to fly through the inclement weather.

Another reason pilots might unwittingly find themselves in a bad "VFR into IMC situation" is because the conditions change without the pilot noticing. Picture this: You are flying along in VFR conditions when you take a moment to fiddle with your radio that keeps emitting a high-pitched squeal when you key the mic. Once satisfied that the squelchy situation is resolved, you look up to find yourself on the cusp between marginal VFR conditions and IMC. The soup is getting worse with every passing minute, and the "where'd everybody go?!" panic starts to set in.

Very similar to the "just around the river bend" bad idea is the overwhelming desire to just get home. Colloquially, this is called "get-home-itis" or "get-there-itis"; however, most theorists refer to it as plan continuation bias. It is like the former because the aversion to sunk costs is the same. But get-home-itis often goes much deeper because the pilot is particularly keen to accomplish their goal even though things have changed and there are indications that doing so is very risky. Sometimes complacency — I've done it before, so why shouldn't it work this time? — over-reliance on technology and good ol' fashioned pride can get in the way of a person's making the safer, albeit seemingly inconvenient choice.

Benjamin Franklin once penned that "an ounce of prevention is worth a pound of cure." Granted, Franklin was talking about fire safety; however, the axiom rings true today and is easily applicable to a host of different situations. Thorough pre-flight planning and being conscious of your skill set and experience level aids in thwarting VFR into IMC tragedies. The best time to take preventative measures is by building a solid "Plan A" and a "Plan B" before you go fly. If you are anything like me, you will even build a "Plan B++." In your plans, you should consider what alternate courses of action will be available if the weather or visibility starts to turn sour, when you should consider adopting those courses of action, and a realistic assessment of your own personal minimums so that you know exactly what you need to do to avoid ever getting close to a bad situation.

## Is That My Runway?

Surface safety in general and runway incursions specifically are very usual suspects in our rogue's gallery due to their high potential risk and frequent opportunities. Our average number per year exceeds 1,000 or nearly 3 per day. We're also seeing a persistent problem with cases of mistaken identity at airports resulting in wrong surface takeoffs and landings. In fiscal year 2023, there were a total of 103 wrong surface operations in the United States (80 wrong surface arrivals and 23 wrong surface departures). That's why we've included an entire article in this issue on the topic. Please check out "Is That My Runway?" on Page 22.

## It's Time

We know that the causes of GA accidents are the usual suspects. We've talked a little bit about mitigation strategies, but one of the most important factors is recognizing that we can all be victims of these suspects. Please take some time to read the full articles (see Learn More below). While they were originally published in 2018, they are still very relevant today.

Susan K. Parson and Sabrina Woods are both former editors of FAA Safety Briefing magazine.

**LEARN MORE**

AOPA Air Safety Institute – 33rd Annual Richard G. McSpadden Report
**bit.ly/McSpaddenReport**

"Master of My Fate: Maintaining Aircraft Control," *FAA Safety Briefing*, Jul/Aug 2018
**bit.ly/3MSxGxy**

"Maybe Not Today . . . Avoiding the Perils (and Regrets) of VFR into IMC," *FAA Safety Briefing*, Jul/Aug 2018
**bit.ly/3ZDFhr4**

"Not an Easy Day to Forget: Remembering Fuel Management Before It's Too Late," *FAA Safety Briefing*, Jul/Aug 2018
**bit.ly/3MXIg6g**

"Thinking for Two: Managing Instructional Risk," *FAA Safety Briefing*, Jul/Aug 2018
**bit.ly/4er6oKm**

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# Is that **My Runway?**

## *How to Avoid Wrong Surface Operations*

*By Tom Hoffmann*

*Editor's Note: This article originally appeared in the Jul/Aug 2018 issue of* FAA Safety Briefing. *We've made several updates to the original article to reflect more recent data on wrong surface operations. We hope this information will help you shore up your runway safety strategies.*

It can happen to the best of us. After a long taxi at a bustling and somewhat unfamiliar airport, it is not uncommon to find yourself at both a literal and figurative fork in the road before takeoff. "Is that my runway?" you mumble to yourself as you gaze at what appears to be a dizzying display of airfield location, instruction, and direction signs. It doesn't help that you're expecting an intersection takeoff and that you've got a long line of eager aircraft right behind you. Too embarrassed to click the mic and ask ATC for help, you feverishly scour the airport diagram in your lap, review your taxi instructions, and crosscheck your magnetic compass to get your bearings. You breathe a sigh of relief as you proceed to line up and wait on the correct runway. Crisis averted! Well ... for today at least. I say that because of the rather alarming rate at which these types of situations occur — save for the "crisis averted" part.

In fiscal year 2023, there were a total of 103 wrong surface operations in the United States (80 wrong surface arrivals and 23 wrong surface departures). And these events are not just occurring at the larger commercial airports. "The risks we are seeing are systemic from small airports to large airports," says Kent Koran, Headquarters Runway Safety Team member. "We're also seeing that wrong surface operations can happen to pilots of all skill levels. Even pilots with years of experience are not exempt from making these basic mistakes."

Cases of mistaken identity at airports have garnered a few unflattering headlines over the years, but the gravity of the issue became most apparent in July 2017 when an Airbus 320 lined up and nearly landed on a loaded taxiway at San Francisco International Airport (SFO). The A320 dipped as low as 59 feet above the surface before executing a go-around and narrowly avoiding four passenger- and fuel-filled airliners. The event was a sobering reminder of the need for increased vigilance among pilots, as well as a need for the FAA to enhance awareness of this potentially deadly issue.

While the mishap at SFO involved a commercial air carrier during night operations, a closer look at both wrong surface takeoff and landing scenarios in fiscal year 2023 reveals that nearly 90% were attributed to general aviation operations during daylight hours. The data also shows that 95% of wrong surface landings occurred when the visibility was 10 miles or greater. So, what's the driving force behind these cases of mistaken identity? Let's round up the usual suspects as well as have a look at what you can do, and what the FAA is doing to combat this issue.

### What is a Wrong Surface Operation?

The FAA defines a wrong surface operation as an event where an aircraft lands or departs on the wrong runway or on a taxiway, or lands at the wrong airport. The danger of such an action is obvious — the surface you mistakenly use could be closed, under repair, or damaged, or it may not be long enough to use for a safe takeoff or landing. You also run the risk of colliding with other aircraft or vehicles approved to operate on that surface, be it a runway or taxiway.

The good news is that there are several red flags, which, if identified in time, can help prevent you from being on the wrong surface at the wrong time.

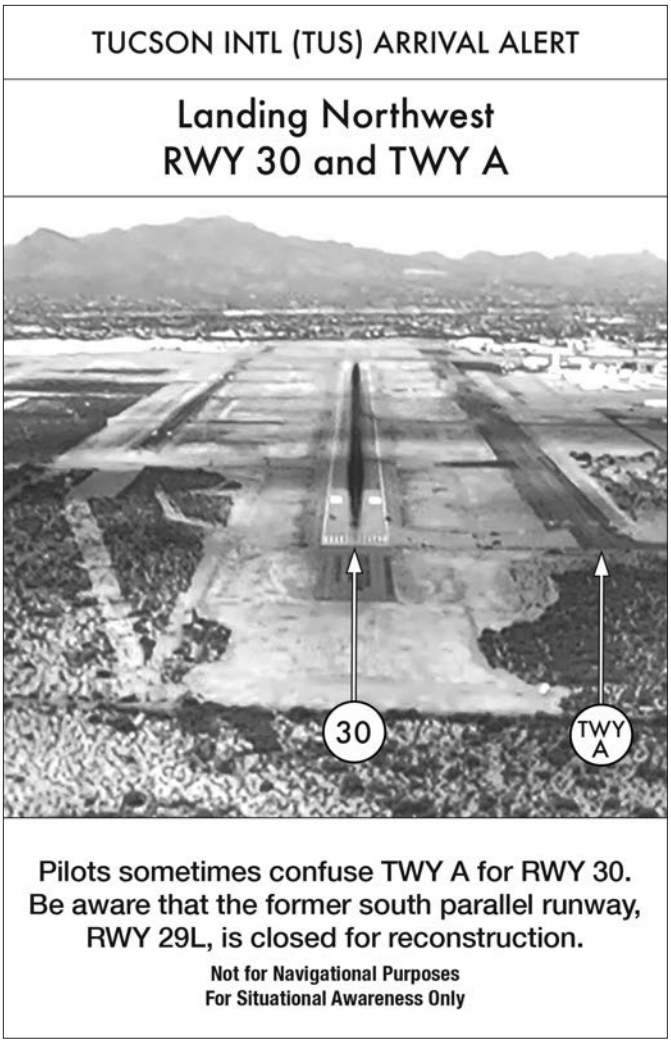
## The Leading Culprits

Causal factors for wrong surface operations typically fall into two main categories: the environment and the pilot. Our opening scenario is a good example of how an airport's environment can contribute to a pilot becoming disoriented or sometimes completely lost. Everything from an airport's size, to runway layout, to activity levels, can contribute (sometimes in concert) to leading a pilot astray. Parallel runways seem to be among the most common triggers for mistaken identity. Often a shorter and narrower parallel runway can get overlooked by a pilot approaching an airport and be mistaken as a taxiway. A different colored surface on each of the runways can also add to the confusion.

Parallel runways can also be staggered laterally and horizontally, sometimes by several thousand feet. A pilot cleared to land on a 3,500-foot Runway 36R may not notice it is much further apart and set back than its 36L sibling — with the latter's clearly marked threshold, touchdown zones, and 8,000 feet of roomy space luring you to land. On the flip side, sometimes an adjacent taxiway can have the same effect, especially when offset parallel runways are in place. What you might think is 36R is actually a taxiway for 36L. The real 36R could be offset further back and harder to discern. The blue taxi lights on "36R" should give away the fact that it's not a runway, but that's not always a given with someone who's already mentally committed to land.

The moral of the story: if your runway has a letter in it, shore up your situational awareness and know what to expect when it comes to runway size, shape, and proximity. That means you need to study your airport diagrams, including those for alternates, very thoroughly before flight. You may also find it helpful to pull up a satellite picture online to get a more realistic view of what you should see. Even better — check out the FAA's Arrival Alert Notices (AAN) at airports with a history of misalignment risk. AANs are graphics visually depicting the approach to a particular airport and language describing the risk of misalignment. You can view the complete list of AANs at faa.gov/aan.

The same vigilance for knowing your surroundings is required for departures. Complex airport geometry can be the downfall of many well-intentioned pilots, especially in a high-paced, busy environment. Pilots used to a single runway, non-towered environment can be in for a rude awakening at a larger airfield, with multiple taxiway and runway intersections. The FAA has labeled many of these complex intersections as "hot spots" on airport diagrams in order to heighten awareness and encourage




**Arrival Alert Notices (faa.gov/aan) visually depict the approach to a particular airport with a history of misalignment risk.**

pilots and vehicle operators to exercise caution in these areas. For a list of hot spot descriptions around the nation, go to faa.gov/airports/runway_safety/hotspots. You can also find airport diagrams, notes, and updates in the U.S. Chart Supplement at bit.ly/2jo7uwK.

Airport construction can require unexpected detours to customary taxi routes, as well as throw a wrench in your arrival plans. For the crew of the aforementioned A320 in San Francisco, construction played a major part in the crew's decision to line up on what they thought was the correct runway. The flight was cleared to land on Runway 28R, but the adjacent 28L was closed for construction that evening with its lights turned off. They overlooked the construction closure and assumed the parallel taxiway off 28R was indeed their runway. To be sure, always check NOTAMs for construction notices ahead of time. To see if an airport currently has an Automated Closure/Restriction Notice Diagram available, search for the specific airport on the FNS NOTAM Search site, located at bit.ly/NOTAMsearch.

When prepping for departure or landing, be sure to listen to ATIS in its entirety. Don't just get wind and the altimeter setting. You could be missing out on crucial construction notices, runway closures, or runway misalignment warnings.

Finally, let's not forget about how Mother Nature can impact a pilot's ability to navigate around the airport. Glare from the sun and wet pavement, snow cover, and fog can all make a departure and/or landing much more challenging. Always check the weather and try to anticipate any visibility restrictions that could present problems at takeoff and later at your destination. If your arrival at a new destination has you approaching right before sunset on a due west heading, consider rearranging your arrival time so it is easier to pick out the correct runway, or for that matter, the correct airport.

### Wrong Airport Arrivals

That leads us to our next area of wrong surface operations, arriving at the wrong airport. Probably one of the most memorable of these situations occurred back in 2013 when a Boeing 747 *Dreamlifter* headed for McConnell Air Force Base (IAB) in Wichita, Kan., instead landed at the much smaller Col. James Jabara Airport (AAO), eight miles away. Contributing to the confusion was the fact that AAO's Runway 18/36 is closely aligned to IAB's Runway 01/19, a difference that was likely harder to distinguish at night. A further complication was the proximity of a third airport

> **Wrong surface operations can happen to pilots of all skill levels. Even pilots with years of experience are not exempt from making these basic mistakes.**

in the vicinity, Beech Factory Airport (BEC), with another identical runway configuration of 01/19. In fact, the crew initially thought BEC was where they erroneously set down, but coordinates relayed to them, as well as the sound of a small twin-engine turboprop flying overhead, confirmed that they had instead landed at Jabara.

There is also a 6,000-foot difference between runways at AAO and IAB, so this just goes to show you how hard it can be to judge the distance of a runway at night. Another red flag in this scenario was the airport's rotating beacon. Civilian airports use alternating green and white flashes, while two quick white flashes between a green flash denotes a military airport.

To avoid having any off-track arrivals, it's best to get a good lay of the land ahead of time. Use nearby geographic features or landmarks to your advantage. Is your airport due east of a lake or a large factory? Here's where brushing up on your pilotage skills can come in handy. In addition to reviewing your sectional chart, Google Earth maps can give you an excellent bird's eye view of what to expect on arrival, including other area airports or features that could appear to be airports (e.g., drag strips, a closed road, a well-lit main street).

Better yet, try browsing through the more than 130 *From the Flight Deck* videos the FAA produces that provide a front-seat point of view at airports nationwide to help reduce mishaps and increase a pilot's situational awareness. Visit faa.gov/flight_deck to see the entire list of videos. There's even a series of videos on focused topic areas, like wrong airport arrivals and departures.

Another best practice to confirm that you have the right airport (and runway) is to use any and all cockpit


Visit the full list of FAA's From the Flight Deck videos at faa.gov/flight_deck.

instrumentation and navigational aids at your disposal. Even if you're VFR, dial in an approach and/or use a GPS waypoint on the assigned runway to confirm your position. When you're cleared for landing, double-check that you are using the runway assigned, not just what you expected to be in use. If you are ever in doubt of your approach or landing, perform a go-around and promptly notify ATC.

## Human Factors

We've discussed several of the environmental factors that can lead to a wrong surface operation, but equally important are the many human factors that come into play. Among those to watch out for are fatigue (did you stay up late watching the playoff game last night?); distraction (did you properly brief your passengers about sterile cockpit rules?); and expectation bias (are you merely hearing/seeing what you want to during approach or takeoff?) By following procedures and staying focused, you'll be able to bring your mental "A" game to every approach and landing.

## An FAA Priority

Due to the potential for fatal accidents, surface collisions, and runway incursions, the FAA has elevated wrong surface operations to a Top 5 Safety Issue within the agency. Although it has made tremendous strides to reduce the threat of runway incursions and wrong surface operations, the FAA is committed to doing more.

For example, the FAA has been deploying a new system, Approach Runway Verification (ARV), that warns controllers if an arriving aircraft appears to be lined up on the wrong runway or taxiway. ARV is currently operational at 39 facilities as of the end of July 2024, with a total of 52 locations expected by the end of September. For more on ARV, visit faa.gov/approach-runway-verification.

The FAA has also began implementing its Surface Awareness Initiative (SAI) that uses Automatic Dependent Surveillance-Broadcast (ADS-B) data to display surface traffic to controllers at airports that do not have a surface surveillance tool. Aircraft and ADS-B-equipped vehicles appear as icons on an airport map depicting runways, taxiways, hold ramps, and other areas. By deploying the SAI capability to the tower cab, controllers will have the awareness necessary to proactively address any potential safety concerns. For more on SAI, visit faa.gov/surface-awareness-initiative.

Outreach is another vital component to the agency's mitigation strategy for wrong surface operations. In addition to the annual Runway Safety Action Team meetings held with aviation stakeholders at each towered airport across the nation, the FAA Safety Team regularly promotes educational campaigns focused on runway safety and technology that can be used to mitigate wrong surface operations.

## The Fundamental Things Apply

So before you head off to your next destination, ask yourself, are you as prepared as you could be for this flight? Have you identified the risks associated with the flight and studied the layout and operations at the destination and alternate airport? For starters, I implore you to check out some of the links below for a refresher on surface safety awareness. A little research ahead of time will save you a lot of heartache later and hopefully keep you at the right place at the right time. Bottom line, each flight is different, so know before you go!

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

### LEARN MORE

FAA's *From the Flight Deck* webpage
**faa.gov/flight_deck**

*From the Flight Deck* video: Wrong Airport Landings
**bit.ly/FTFD_WrongAirport**

*From the Flight Deck* video: Wrong Surface Landings
**bit.ly/FTFD_WrongSurface**

SAFO 17010, *Incorrect Airport Surface Approaches and Landings*
**bit.ly/SAFO_17010**

NTSB Safety Alert 033, *Landing at the Wrong Airport*
**bit.ly/NTSB-SA33 (PDF)**

SKYbrary: Wrong Runway Use webpage
**skybrary.aero/articles/wrong-runway-use**

JAMES WILLIAMS

# A MORE DYNAMIC APPROACH


Using filters can help you refine your search for documents on DRS. Go to drs.faa.gov/help for tips, training, tutorials.

As the year winds to a close, it's usually a time of reflection. I look back 18 years to when I first joined the FAA. There was a significant change in the air (no pun intended) that didn't impact me but was going to be a big deal for my colleagues in the Flight Standards Service. The guidance handbooks for our aviation safety inspectors (ASI) were being combined. This was a major change in service of a larger goal and a more streamlined guidance structure. They say the one constant is change, and I agree. The story never ends; only the characters change. And that leads us to today.

The same drive to centralize and streamline didn't end when that project was completed. That desire not only yields a better experience for end users (including the public) but also decreases costs by reducing the systems that need to be updated and maintained. We now have a descendent of that project, the Dynamic Regulatory System (DRS) at drs.faa.gov.

## Advantage Dynamism

If DRS was only a modernized system for FAA workforce guidance it wouldn't be worth much beyond a brief mention, but it's a lot more. DRS is a hub of information that solves a problem I didn't even know I had until I came to the FAA. I thought I had a much better understanding of rules and regulations than I did. I felt like I'd read the regs, so I knew what I needed to know about those things. I've come to feel, though, that there's nothing more intellectually dangerous than being about halfway prepared while thinking you're completely ready. DRS is a nearly never-ending story of regulations, guidance, policy, and a host of other documents all neatly packed into one website. It's a resource I never would have dreamed of back during training days when we would endlessly debate the finer points of the legal side of flying. I promise it was more interesting than it sounds. As they say, DRS fixes this.

DRS combines more than 52 document types from more than a dozen different repositories into a single searchable application. You can search a topic across all those document types or just the type you select. You can also search both current documents and historical ones if you are interested in seeing how the FAA's guidance has changed. Document types include Airworthiness Directives (AD), Advisory Circulars (AC), FAA Orders, Information for Operators (InFO), legal interpretations, Safety Alerts for Operators (SAFO), Special Airworthiness Information Bulletins (SAIB), Supplemental Type Certificates (STC), Type Certificate Data Sheets (TCDS), and more.

You can browse or search. Browsing allows you to look through document types or categories and use filters to narrow the results, while the search function will bring up every instance of that term including in the text of documents. Think of it like the difference between using the table of contents (browse) versus the index (search) of a book. The table of contents will tell you where the chapter on a subject is while the index will tell anywhere that subject is mentioned in the whole book. Generally, the search function will return a far larger number of results than the browse function. So, it's better to use search when you're looking at general concepts and browse when you have a more specific document or objective in mind. If you do find a set of results that look promising, or you want to share them, you can save them by hitting the "save selected search results list" button. The button will generate a spreadsheet download that contains the list of results along with hyperlinks to the full document along with some additional information about each entry. The upper limit for saved results is 1,000 entries so you may need to refine your search for some topics.

DRS represents a major improvement to your access to important aviation safety information. While many of these databases were already available, they were sometimes hard to find. Now, more information is more easily accessible to more people. While it's true that the only constant is change, this change is a good one.

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

# ADS-B

## SEE AND BE SEEN

Produced by FAA Communications | 2023-AJM-012

## Experience a New Level of Safety #ADSB

**Visit the Equip ADS-B Website to:**

- Find out if your ADS-B Out equipment is working properly
- Review the top five things pilots should know about their ADS-B system
- Learn more about the FAA's Privacy ICAO Address program
- See aircraft equipage levels by category
- Report an issue with TIS-B, FIS-B, or other aspect of the ADS-B system

FOR MORE INFORMATION:
WWW.FAA.GOV/GO/EQUIPADSB

Federal Aviation Administration

REBEKAH WATERS

# FLYING IN A FRIA

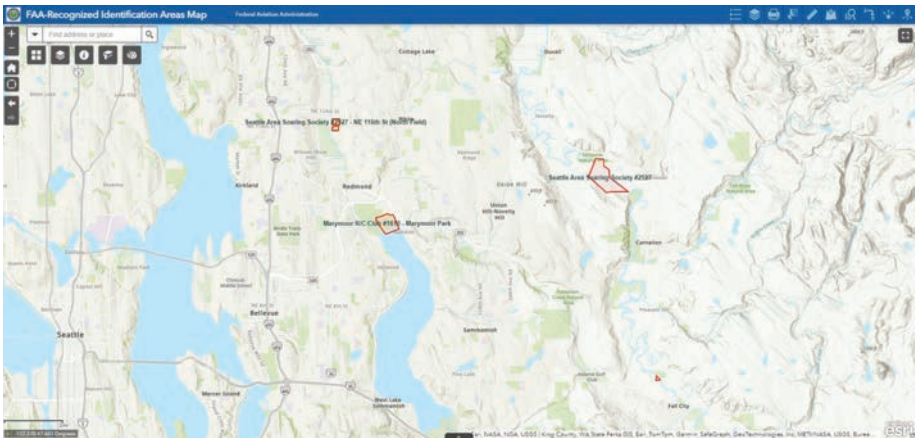
Many years ago, I bought my son a drone for Christmas. It wasn't fancy — just a little one that you could pair with your phone to capture video and photos. We registered it with the FAA and had some fun flying it around the backyard. Today, it sits on a shelf somewhere forgotten and gathering dust.

A lot has changed since my son first unboxed this drone, so if we wanted to fly it again there are a few steps we'd have to take such as finding the lost remote control, replacing the batteries, and dusting it off. Most importantly, we need to ensure compliance with the FAA's Remote ID Rule. Almost all drones must comply with Remote ID, which is like a digital license plate that broadcasts information about the drone, its altitude, speed, and where it's being controlled from or its takeoff location. To learn more about Remote ID, read "Rolling Out the Rules" in the Mar/Apr 2021 issue of *FAA Safety Briefing*.

So how would we comply with Remote ID? Equipping the drone with a broadcast module is one way to comply, but since we aren't likely to fly it more than a few times a year, this option would be cost-prohibitive. Instead, we can look into flying in an FAA-Recognized Identification Area (FRIA) which is a geographical location where drones can be flown if they don't have Remote ID equipment.

## Why are there FRIAs?

As of Sept. 16, 2023, all drones that are either registered or required to be registered must comply with Remote ID. This means that if your drone is not equipped with Remote ID, you can only fly in a FRIA. Both you and your drone must be located within the FRIA's boundaries during the entire flight. You must also be able to see your drone the whole time. You might think of a FRIA as being kind of like a dog park. At a dog park, you can let your dog play off-leash, but you still have to stay in the park and keep an eye on your dog at all times. As always, safety is the top priority!




Locations of approved FRIAs on the FAA's UAS Data Delivery System.

## How are FRIAs Established?

FRIAs are requested by FAA-recognized Community-Based Organizations (CBOs) and educational institutions and approved by the FAA. The FAA started accepting applications on Oct. 24, 2022. As of the writing of this article, the FAA has approved 2,415 requests. CBOs account for 1,970 of the approved FRIA requests, and the 445 other approved requests came from schools. For more information about establishing a FRIA, see the Learn More section.

## Where are FRIAs Located?

If you've decided that flying in a FRIA is the way to go, you can find approved FRIAs on the FAA's UAS Data Delivery System at bit.ly/FRIAmap. This FAA-enabled web service provides drone pilots and other stakeholders easy access to data via a user-friendly map. When I checked my area, I found out there is a FRIA about one mile from my house. Be sure to explore the map to see how close you are to your nearest FRIA. (Pro tip: You may need to zoom in to spot the smaller FRIAs.)

All drones are welcome to fly in FRIAs, even if they are equipped with Remote ID. Everyone who flies in a FRIA must still comply with all safety rules. While it's unlikely that my son will ever dust off the drone I bought him all those years ago, it's nice to know there is still a place where he can fly it nearby.

**Rebekah Waters is an FAA Safety Briefing associate editor. She is a technical writer-editor in the FAA's Flight Standards Service.**

### LEARN MORE

FAA-Recognized Identification Areas
**bit.ly/FAAFRIA**

FAA DroneZone
**FAADroneZone.faa.gov**

AC 89-3, *FAA-Recognized Identification Areas*
**bit.ly/AC89-3**

14 CFR part 89, *FAA-Recognized Identification Areas*
**bit.ly/14CFRpart89**

REBEKAH WATERS

# SOLVING ENGINE CONTROL CABLE PROBLEMS

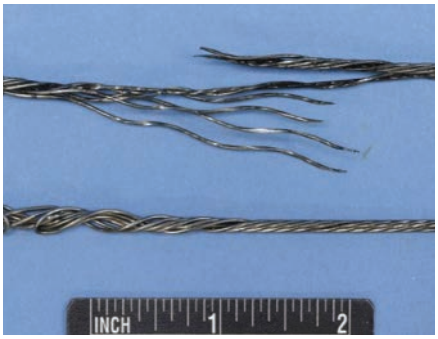
During a commercial sightseeing flight, a Cessna U206F *Stationair* lost partial engine power. The pilots could not regain full power and were forced to land on a dirt road. When the pilots tried to reduce the throttle to idle, the throttle and about two feet of throttle cable came out of the control panel. Luckily, the two pilots and their four passengers walked away without injury, but the aircraft did sustain substantial damage. This is just one of the accidents listed in the Safety Alert (SA092) that the National Transportation Safety Board (NTSB) issued in May 2024 titled: *Mechanics: Check the engine control cables!*. According to this safety alert, "this accident might have been avoided if the throttle cable had been replaced during the last engine overhaul."

SA092 identifies three problems:

- Missing or incorrectly installed securing hardware at the connection of the carburetor or fuel servo,
- Original throttle and/or mixture cables that are worn or several decades old,
- And failure of throttle and/or mixture cables or issues with installation and securement of associated hardware.

Preventative maintenance and careful inspection of engine control hardware and cables are the solution. So, let's take a look at how you can make sure you are part of the solution, and not the problem.

Engine control cables are integral to aircraft operation. When they break or disconnect, the results are pretty similar to engine failure. If securing hardware at the connection of the carburetor or fuel servo is missing or incorrectly installed, throttle and/or mixture cables might not function the way they should. Worn or old cables can ultimately fail due to wear or fatigue fracture (or a combination of both factors). Whatever the reason, failure of these engine components can lead to dangerous situations. As discussed in SA092, careful inspection of installed hardware and worn cables is a very important part of an aviation maintenance technician's (AMT) job.




Made up of bundles of individual steel wires that are grouped together, control cables are built for strength and flexibility. This design means they need a close and careful inspection to identify potential issues. They should also be inspected as soon as practical after any report of resistance, binding, or sticking. It is important to replace engine control cables whenever an inspection uncovers an issue. Remember that even a single broken wire strand in a critical fatigue area means the entire cable assembly must be replaced.

Checking and securing hardware is crucial for safety. Missing or improperly secured hardware can also lead to partial or total engine failure. So, in addition to inspecting the cables, it is also important to double-check that securing hardware is in place. A missing cotter pin, for example, could have disastrous consequences.

> **REMEMBER THAT EVEN A SINGLE BROKEN WIRE STRAND IN A CRITICAL FATIGUE AREA MEANS THE ENTIRE CABLE ASSEMBLY MUST BE REPLACED.**

Whether conducting maintenance or inspections, always make sure that hardware is present and secured appropriately. If you are supervising a less experienced AMT, it is especially important to closely examine this type of maintenance work.

Always follow manufacturer repair or maintenance instructions or other FAA-approved maintenance programs for your aircraft. When using a checklist, make sure it complies with part 43, appendix D (bit.ly/Part43AppxD). Worn cables can cause big problems, so be sure to give these components the attention they deserve!

**Rebekah Waters is an FAA Safety Briefing associate editor. She is a technical writer-editor in the FAA's Flight Standards Service.**

**LEARN MORE**

AC 20-143, *Installation, Inspection, and Maintenance of Controls For General Aviation Reciprocating Aircraft Engines*
**bit.ly/AC20-143**

AOPA's *Aircraft Maintenance: Understanding and Inspecting Flight Control Cables*
**bit.ly/47sDMhD**

NTSB's SA092, *Mechanics: Check the engine control cables!*
**bit.ly/3XCyStD (PDF)**

# HOW TO MINIMIZE DISTRACTIONS FROM PORTABLE DEVICES

Flying a helicopter demands constant, undivided attention. With portable electronic devices (PEDs) like cell phones, smartwatches, and tablets, there's more to look at inside the cockpit. So, when do our electronic devices change from being helpful to deadly distracting gadgets?

We think we can multitask, but our brains simply aren't designed to perfectly concentrate on more than one thing at a time, so things get missed. Maintaining situational awareness means limiting distractions, especially when flying a helicopter.

Let's look at an example of how deadly distractions can be. A pilot of a Bell 206 was returning from a business trip over featureless terrain in New Mexico. Visibility was at least ten miles, and the weather was good. The pilot was flying low along the contour of the ground. At the same time, he was on a cell phone call with a rental car agency. He wasn't paying attention to the gradually rising terrain under the aircraft. The helicopter impacted the ground and was consumed by fire. For the rental car agent on the other end, the call suddenly ended.

The NTSB determined that the pilot was likely distracted by the phone call as he flew into the ground with the bright afternoon sun and featureless terrain. When a pilot is distracted and loses situational awareness, confusion and a startled response are the typical results. Critical moments can pass while a pilot attempts to regain focus.

PEDs can easily distract. It's important to understand when and under what circumstances to properly use them. Using an electronic flight bag for navigation is common these days, but it, too, can cause a distraction severe enough to wreck the situational awareness that it's supposed to enhance.

So how do you manage the use of portable electronic devices to a reasonable level? Here are some tips.

Thorough preflight planning will minimize distractions from a portable device during flight. Also, practice a data collection routine that reduces the need to search your device for information during flight.

Develop your contingencies before you take off. Maintaining an adequate level of proficiency should include both the machine you're flying and the electronic device you rely on. Today's flight management software is amazing. However, you should know how to quickly sift through the software. Practice on the ground to get the keystrokes down.

As in the rental car example, making or accepting phone calls, text messages, or emails during the flight can end tragically. Make it your practice to put your phone in airplane mode, or better yet, stow it away before you lift off. If you drop a device, it can lead to distraction, spatial disorientation, or jammed flight controls, possibly leading to a loss of control. Relying on your device could also lead to trouble if it's your sole source of navigation. What if it malfunctions or the battery gets depleted? Always have an electronic or paper backup.

As a rule, limit all electronic device usage for the safety of flight. Oh, and that business call you forgot to make. It can wait. If your boss, your passengers, or your spouse understood the risk, would they be okay with these distractions?

Remember, nonessential PED usage adds risk to your flight. Your primary task is always to fly the aircraft. Aviate, then navigate and communicate. Good preflight planning and contingency plans can keep portable electronic device distractions to a minimum.

### Tips to Avoid Distractions from PEDs:

- Be thorough in preflight planning.
- Have a routine for searching your PED.
- Develop contingencies before you take off.
- Pilot proficiency includes using your PED.
- Know your keystrokes by practicing on the ground.
- Avoid calls, texts, and emails with Airplane Mode.
- Stow your PED to avoid dropping it in flight.
- Have a paper or electronic backup of nav info.
- Limit PED use to the safety of flight uses only.

(Photo courtesy of PIVOT)

The Rotorcraft Collective is a joint workgroup between the FAA and industry professionals that produces short helicopter-focused safety videos in collaboration with the FAA Safety Team (FAASTeam) and the United States Helicopter Safety Team (USHST).


Check out our GA Safety Facebook page at **Facebook.com/groups/GASafety.**

If you're not a member, we encourage you to join the group of more than 16,000 participants in the GA community who share safety principles and best practices, participate in positive and safe engagement with the FAA Safety Team (FAASTeam), and post relevant GA content that makes the National Airspace System safer.

### Aviation Weather Under the Microscope

**Excellent article ["A Fresh Forecast" bit.ly/3vc1JLu]. I'm going to save this for the next time I give a FAAST seminar on aviation weather. It's better than what I've developed over the years on my own. Or more to the point, you are better wordsmiths than I.**

**A point should be made about the changes that the Aviation Weather Center (AWC) has implemented. I find the new site updates extremely useful. While I continue to use other resources as well (I retired from meteorology a couple of years ago) I use and strongly recommend AWC in my lectures, and individually.**

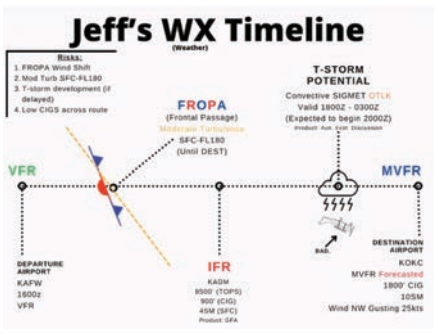
**— Gerald**

*Hi Gerald. Thanks for reaching out! We're glad to hear that the information in the article was presented in a useful format and that you'll be able to incorporate it into your work with the FAASTeam.*

*And thank you for highlighting the updates on aviationweather.gov, we're fans as well ☺. The new site presents a cleaner appearance than the legacy site and features more interactive maps, static images to embed in briefing material, and a dark mode. Users can also select the most recent weather or view the previous 48 hours, customize their map displays to show raw or decoded data, and save searches using the "remember" feature. The overhaul also merged the legacy Helicopter Emergency Medical Services (HEMS) tool into the same framework as the Graphical Forecasts for Aviation while keeping its focus on low-altitude flight.*

### Unleashing Your Inner Weather Briefer

**Thanks for putting this together ["Building Confidence with the Conditions" bit.ly/4cdDIUS] in the March/April 2024 issue. It's great advice and I'll apply it personally and also share it. I'm very comfortable with weather briefings (which means I've made some mistakes and learned from them ... hopefully!), but there's always room for improvement and the changes last fall to aviationweather.gov took me a bit to accept. I also love the "bad" comment under the thunderstorm in your infographic!**




Creating a weather timeline can help pilots better keep track of weather conditions along their route.

**— Damon**

*Hi Damon. Thank you for your comments! We're happy you found the information valuable and pleased to hear you plan to share it. As you mentioned, there are always opportunities to stay sharp and further develop skills, including familiarizing yourself with updates to weather resources you refer to. Thanks for making the FAA Safety Briefing one of those resources!*

**For more stories and news, check out our blog "Cleared for Takeoff" at medium.com/FAA.**

*Let us hear from you! Send your comments, suggestions, and questions to SafetyBriefing@faa.gov. You can also reach us on X (formerly known as Twitter) @FAASafetyBrief.*

*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.*

# ON THE WINGS OF CHANGE

It's hard to believe, but this past October marked my 16th year working on *FAA Safety Briefing* magazine. Time flies. Our "reader's choice" focus for this issue had me reflecting on some of the various changes and enhancements we've made during my span on the staff. As our masthead states, we are the FAA safety policy voice of non-commercial general aviation, so we have a responsibility to continually strive toward refining our message and improving how we communicate with our readers. Allow me to recap a few changes that I believe have had the greatest impact.

## Cue the Theme Music

Shortly after I joined the team, we introduced a theme concept with each new issue. The idea was to select a single subject area and create content around that central topic. It seemed like a simple change at the time, but its impact has been immense. For starters, having a theme allows us to dive much deeper into a given subject area, considering it from various angles and viewpoints, and providing more detail than a single feature article would allow.

Another key benefit of using themes is improving a given issue's shelf stability. By having a central theme, we envisioned readers reading it like any other publication but also keeping it on the shelf and referring to the issue later if needed. This might be of particular value to flight instructors who want their students to brush up on a specific subject area, like pilot/air traffic controller communications for example. In this case, they could easily hand them a copy of the "Aviation Communications" issue from May/Jun 2020 or forward them the link bit.ly/4d0B1oH.

A similar benefit is realized with some of our FAA Safety Team personnel who either attend special events or present on a specific aviation safety topic. Having hard copies available of an issue that complements the subject matter at hand has proved to be extremely useful.

A final note on themes is that they have enabled unique opportunities for us to present GA-specific content from a variety of FAA offices. A few recent examples include issues focused on information from the Office of Commercial Space Transportation, the Flight Program Office, and the Office of Aerospace Medicine.

## Improving Readership by Design

*"Good design is obvious. Great design is transparent."* — Joe Sparano

Over the years, we've had a few chances to refine our design, not to mention a name change too (recall *FAA Aviation News*?) Our goal was to try and create a more functional reader experience while also enhancing the magazine's overall look and feel. During the most recent design change, we went to a full-page photo cover, incorporated more imagery in our departments, and made a few less noticeable typeface and text layout changes to improve readability.

## Let's Get Social

Our biggest change over my tenure has been our digital presence online and on social media. In addition to providing PDF versions of each magazine, in the mid-2010s, we began creating electronic files for tablet readers. Then in 2016, we began creating online versions of each article, starting with features, and later adding our departments. Current versions of our online articles are created with Medium, a long-form blog platform the FAA started using in 2020. These e-versions have been a game-changer in our ability to increase distribution and views as well as capture metrics. To check out all the FAA's content, visit Medium.com/faa. You can find *FAA Safety Briefing* content under the Magazine tab.

We've stepped up our social media presence too. We host a channel on X (x.com/FAASafetyBrief) that covers magazine content and a host of other GA-relevant news and information. Our GA Safety Facebook group (facebook.com/groups/GASafety) has nearly 17,000 members who are actively engaged on the site. If you're not a member, have a look and consider joining. We also support FAA's social media efforts on LinkedIn, Instagram, and YouTube.

## A Talented Team Effort

Of course, none of these enhancements would be meaningful or even possible without the right talent in place. While we were sad to say goodbye last year to our former editor-in-chief Susan Parson and assistant editor Jennifer Caron, we did have the pleasure of welcoming two new members to the team, associate editors Nicole Hartman and Rebekah Waters. Together with long-time editors Paul Cianciolo and James Williams, our team boasts immense aptitude and enthusiasm that I know will keep us on a successful path and help us capably usher in whatever the future holds!

PAUL CIANCIOLO

# CHRISTOPHER YANNI

*Manager, FAA Flight Standard Service's Certification Section*

Christopher Yanni's passion for aviation began to surface when he found his grandfather's floppy disk containing Microsoft Flight Simulator V2. Though, flying on a Tandy 1000 computer hardly compares to the real thing.

The aviation bug returned at the Cleveland National Air Show, which Christopher attended each year while studying management at Case Western Reserve University in Ohio. After earning his bachelor's degree, he worked at a regional bank's headquarters. It was across the street from Cuyahoga County Airport.

"I knew then that I didn't want to piecemeal a flight lesson here and there on Saturdays and needed to make it my career field," Christopher explains. "I quit my job, took out additional student loans, and went back to school at Kent State University for a second undergraduate degree in aviation flight technology."

After graduating, Christopher worked as a flight instructor before moving to New Hampshire to teach at Daniel Webster College. After six years of instructing and accumulating 1,100 hours of dual-engine time, he flew for Cape Air out of Boston and the Caribbean for eight years. Then, he took on a role as the chief pilot for a pre-certification start-up air taxi operator. That's where he met an aviation safety inspector who inspired him to take on a role at the FAA.


**In August, Christopher Yanni represented the FAA at the U.S.-China Aviation Cooperation Program's General and Business Aviation Safety Symposium in Beijing.**

In 2016, Christopher became an inspector at the Flight Standards District Office (FSDO) in Portland, Maine. In 2020, he joined the headquarters team as a certification subject matter expert. He took a temporary detail back at the FSDO as a frontline manager, then back to headquarters in the Airmen Testing Standards Branch. He later managed teams in offices working on data systems and training management before returning to the FAA Flight Standards Service General Aviation and Commercial Division's Certification Section this year.

"My current responsibilities support a diverse and outstanding group of teams on subjects ranging from foreign pilot licensing and international support to military qualifications, and most recently, the MOSAIC [Modernization of Special Airworthiness Certification] and powered-lift rulemaking teams," he adds.

The Certification Section provides regulatory guidance and support to FAA inspectors regarding general aviation airmen and flight instructors and policy regarding qualifications and currency. One of the section's recent accomplishments is the new rule and supporting guidance for airmen certification in powered-lift aircraft, e.g., air taxis, which will be published soon. This will significantly advance the ability of industry participants to become viable entities while operating powered-lift aircraft.

"We consistently strive to advance clarity and feasibility for new airman entrants into the NAS [National Airspace System] while ensuring that safety is never compromised," he notes. "One of the biggest challenges is making sure that training and certification processes are clear and effective, make positive gains in safety, and do not result in a bureaucratic set of hurdles. We are listening to industry and citizen stakeholders to work toward the most cooperative and acceptable means of achieving the highest degree of safety possible."

A recent accomplishment of Christopher's was serving as a lead participant focusing on "personnel and licensing training" during an audit of the FAA by the United Nations' International Civil Aviation Organization (ICAO) last summer.

"This was a genuine personal learning experience where we were evaluated for compliance with ICAO Annexes regarding everything from inspector training to standards for pilot currency and competency," he explains. "I see this audit as an opportunity for continuous improvement. We maintain state sovereignty regarding decisions on how we address any findings. However, this process will give us another opportunity to review our current systems, policies, and practices with an eye toward other, perhaps better ways of doing things."

Speaking of reviewing and improving, Christopher aims to return to the flight deck. His 4-year-old keeps pointing at the sky and saying, "Daddy, you teach me to drive that?" He will take to the skies over Maine after a brief flying hiatus to fly with his family — the best part of general aviation.

**Paul Cianciolo is an associate editor and the social media lead for FAA Safety Briefing. He is a U.S. Air Force veteran and an auxiliary airman with Civil Air Patrol.**

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# LOOK WHO'S READING *FAA Safety Briefing*

**"When I'm not on an adventure in the clouds, I'm keeping current on GA safety!"**

**— Kay Hall**

***pilot, social media in luencer, author***

@FlyWithKay