July/August 2025

FAA Safety BRIEFING

TAKING ACTION

for Safer Skies

Federal Aviation Administration

U.S. Department
of Transportation

**Federal Aviation
Administration**

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ABOUT THIS ISSUE…

The July/August 2025 issue of *FAA Safety Briefing* focuses on many of the important safety issues highlighted during the FAA's recent "call to action" meeting for general and business aviation. Feature articles emphasize some key reminders to help improve NAS safety, like how to combat complacency, mitigate risk, improve communications, and avoid safety drift.

(Cover photo taken at EAA AirVenture 2024)

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www.faa.gov/safety_briefing

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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

ELEVATING GENERAL AVIATION SAFETY

In early March, Acting Administrator Rocheleau, along with many FAA colleagues, aviation industry partners, and labor organizations, convened a special "call to action" meeting to discuss ideas on how to make general and business aviation safer. The meeting was called in response to recent safety incidents and provided an opportunity to explore some proactive measures for systemic improvement in the national airspace system (NAS).

Discussion topics ranged from how to refocus attention on safety management systems to ways to identify and mitigate "safety drift" in the system. After some productive collaboration, the group established several steps that we believe will positively impact industry safety and which we plan to implement rapidly. (You can find more about the meeting at faa.gov/GA-action and in the FAA's press release at bit.ly/CTA_PR).

Among these steps are plans to communicate several key safety reminders through various outlets in the FAA and the GA community. This would include information on topics like combating complacency and improving communications.

We chose this issue of *FAA Safety Briefing* to help amplify many of these efforts. It's our hope that these pages will help you sharpen your skills in some areas and expand your knowledge in a few others.

For starters, we take a look at the importance of enhanced pilot awareness before and during flight, particularly regarding Notices to Airmen (NOTAMs) and temporary flight restrictions (TFR). The feature "Avoiding TFR Tangles" provides several tips to enhance your airspace awareness and avoid being in the wrong place at the wrong time.

A common thread of accidents is what's known as safety drift, a gradual deviation from established safety procedures and best practices. Disciplined checklist usage is a good way to keep complacency at bay and is the focus of the feature "Subverting Safety Drift." You can also read in our Vertically Speaking department how scenario-based training, which immerses pilots in realistic scenarios and encourages active decision-making, is another effective means of preventing safety drift.

In the feature "Cockpit Convos," we cover the importance of speaking "plane-ly" and provide tips for fine-tuning your aviation phraseology and radio skills. This is particularly critical in busy airspace where there may be a mix of VFR and IFR traffic.

Another way to improve safety is to have the right tools at your disposal. This issue takes an in-depth look at some tools that help you assess operational risk before flight and analyze your performance post-flight. We also explore how incorporating a scalable safety management system (SMS) can help formalize your decision-making process and better engrain safety into your operations.

The FAA's General and Business Aviation Call to Action serves as a critical step in addressing current safety challenges and driving what we need to focus on next. The initiative also signifies a broader shift towards a more proactive and collaborative approach to aviation safety and will help us strive for a culture of continuous improvement. We encourage you to read on and find new ways to stay sharp and elevate safety on your next flight.

Lastly, I'd like to call your attention to this year's National General Aviation Award winners: Flight Instructor of the Year **Adam Boyd**, Aviation Technician of the Year **Samuel "Beau" Hardison**, and FAASTeam Representative of the Year **Josselyn Slagle**. Please join me in congratulating these airmen for this prestigious honor and be on the lookout for them this July at AirVenture. Be sure to go to GeneralAviationAwards.com to learn more about their amazing achievements, as well as how to nominate a deserving airman you know next year.

Safe flying!

AVIATION NEWS ROUNDUP

Laser Strikes Continue to be Dangerously High

Pilots reported 12,840 laser strikes to the FAA last year. While that is a 3% decrease from 2023, the numbers are still too high.

Shining a laser at an aircraft poses a serious safety threat and is a federal crime. Lasers can incapacitate pilots, many of whom are flying airplanes with hundreds of passengers. Pilots have reported 328 injuries since the FAA began tracking laser strike reports in 2010.

To identify trends, the FAA's visualization tool (bit.ly/49swuJX) shows laser-strike data from 2010 to present and highlights trends by geographic area, per capita data, time of day, and year. The FAA shares the information with the public to draw attention to the dangerously high rate.

The FAA strongly encourages people to report laser strikes to the FAA (bit.ly/reportlaser) and local law enforcement agencies.

If you encounter a laser illumination event during flight, remember to aviate, navigate, and communicate, in that order. For more tips on what to do if you get "lased," visit bit.ly/BlindedLight.

FAA Accelerates Modernization of NOTAM Service

The FAA is accelerating the modernization of a new Notice to Airmen (NOTAM) service this year, much earlier than originally planned. The FAA used a streamlined, innovative vendor challenge to cut through red tape to get this critical work done as fast as possible.

NOTAMs communicate temporary changes such as runway closures, airspace restrictions, and obstructions to pilots and flight planners. More than 4 million NOTAMs are issued annually.

The modernization will provide near-real-time data exchange, enabling efficient data flows and better stakeholder collaboration. The system will be securely hosted in the cloud and have a scalable and resilient architecture.

A major NOTAM system outage in January 2023 highlighted the fragility of the system and the need to speed up the modernization. The FAA selected CGI Federal, Inc., to work on modernizing the NOTAM system and deploying the service. CGI is currently on an accelerated schedule to deliver the NOTAM Modernization Service by July 2025, and the FAA is targeting deployment of the operational service by September 2025.

Risks Associated with Visual Approaches SAFO

The FAA recently published a Safety Alert for Operators (SAFO 25001) to remind air carrier operators and pilots of risks associated with visual approaches.

As the National Airspace System (NAS) continues to grow in use and complexity, efforts have been ongoing to prevent unsafe operations such as runway incursions, unstable approaches, altitude and route deviations, and runway identification errors. Considering recent events, the FAA identified the need to ensure all operators and pilots understand and evaluate the risks associated with the acceptance and execution of visual approaches.

To mitigate risks associated with complex operations, operators and pilots should consider strategies such as:

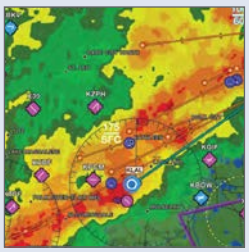
- Methodologies for assuring increased vigilance while operating at airports with published visual

#FLYSAFE GA SAFETY ENHANCEMENT TOPICS

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

JULY

Over Water Pilot Operations



AUGUST

Inflight Weather Information Resources

flight rules (VFR) routes in the vicinity of approach and departure paths.

- Requesting an instrument approach to reduce the likelihood of misalignment with VFR traffic, runways, or taxiways and maintain a stabilized approach.
- Communicating "UNABLE" to ATC if there is inadequate time to recalculate landing performance, reconfigure avionics, brief the new approach procedure, or stabilize the approach.
- Maintaining an active visual scan to avoid potential conflicts.

Review this SAFO and others at bit.ly/4eciUx4.

FAA Supports AOPA National Pause for GA Safety

On April 1, the Air Safety Institute, with support from more than two dozen other organizations and the FAA, launched the National Pause for General Aviation Safety. Over a six-month period, pilots are being asked to take a few minutes to focus on safety and review a variety of videos, courses, and articles that cover every type of GA flying. Pilots are encouraged to visit GAsafe.org to learn more.

Every pilot has a responsibility to themselves, their loved ones, the industry, and the public, to be as conscientious, disciplined, and deliberate about general aviation safety as possible. Whether flying recreational, corporate, or for the greater good, safety is at the heart of every flight.

By participating in the pause, you are joining thousands of other GA pilots who have committed to sharpening their focus in areas relevant to how they fly.

As a bonus, earn WINGS credit after successfully completing a 15-question GA safety quiz. Visit GAsafe.org for more information.

Improving the Airman Medical Process

Aviation stakeholders representing pilot groups and aviation organizations heard the welcome news that the FAA will move quickly to evaluate their suggestions on how to improve the airman medical certificate process during a listening session held at the FAA headquarters building.

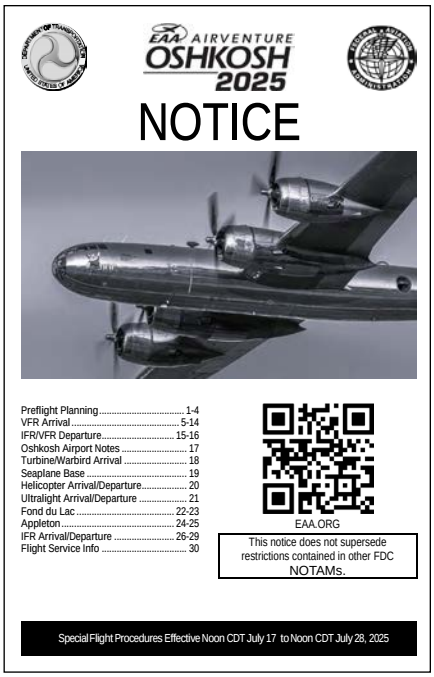
Stakeholders offered a host of creative ideas for improving the process, including:

- Create a plain-language version of the Guide for Aviation Medical Examiners so pilots can better understand requirements.
- Clarify confusing questions on medical certificate application forms.
- Encourage pilots to report medical conditions by providing information about how long it takes to resolve common issues.
- Identify the top five diagnoses by age group and provide information on how to address them, using flow charts or checklists.
- Create a webpage with QR codes that lead to information on common conditions.
- Recruit pilots to do video testimonials about how their conditions were resolved.

Visit bit.ly/FAAMedProcess and this issue's Aeromedical Advisory department for more information on the event.

2025 AirVenture Procedures

The FAA published the Oshkosh 2025 Notice — a must-read for anyone flying an aircraft to AirVenture. The document outlines procedures for many types of aircraft that fly to Oshkosh for the event, as well as aircraft that land at nearby airports.


EAA AIRVENTURE OSHKOSH 2025

NOTICE

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EAA.ORG

This notice does not supersede restrictions contained in other FDC NOTAMs.

Special Flight Procedures Effective Noon CDT July 17 to Noon CDT July 28, 2025

Air traffic control (ATC) will once again have the option to assign transition points approaching Oshkosh from the west to east to ease holding and congestion. These points are Endeavor Bridge, Puckaway Lake, and Green Lake. They will be announced on the arrival ATIS when ATC activates them, which will be at times of highest traffic.

What you need to know:

- Maintain 90 knots until entering downwind at Oshkosh
- New depiction of gravel pit/beginning descent over gravel pit (any portion) when arriving to Runway 27
- Addition of a QR code on the NOTAM cover that directs to the EAA "Flying In" web page
- References to mass arrival schedule, transient helicopter operations, and the EAA Seaplane Base

To ensure safe operations on arrival and departure, go to bit.ly/OSHnotice to download the Notice.

DR. SUSAN NORTHRUP, FAA FEDERAL AIR SURGEON

MEDXPRESS ENHANCEMENTS

Recently, Dr. Brett Wyrick, the Deputy Federal Air Surgeon, and I had a chance to address aviation stakeholders, including representatives from airline unions, business aviation, and general aviation. I discussed our challenges, successes, and some of our current initiatives to improve the medical certification process. The stakeholders had the opportunity to offer suggestions on how we can better serve the aviation community. For this issue, I would like to update you on our efforts to improve MedXPress.

In 2012, the FAA transitioned from a paper-based application for medical certification to a web-based platform, MedXPress (medxpress.faa.gov), used by both the applicant and the aviation medical examiner (AME) AME. MedXPress was designed solely as a portal for airmen to submit their applications. This offered many advantages, including improved legibility, near instantaneous transmission time, and the opportunity for pilots to find information regarding medical conditions and evaluations before going to the AME. We recognize that this can be challenging though.

Recent enhancements have added functionality. The airman can now check the status of an application review when the airman has received a deferral from their AME or when the FAA has requested additional information. The AME can also upload documents for review directly to the FAA. We are working on expanding both the size and number of documents that the AME can upload.

While these enhancements have been well received, airmen have requested additional capabilities, like those seen in modern electronic medical records (EMR) used in clinical practice. Additionally, the airman and AME communities have requested features such as the ability to review prior applications and auto-fill information fields between examinations, especially those that do not change (e.g., date of birth, past medical history, etc.). We in the Office of Aerospace Medicine would also like to expand visibility of uploaded medical records, communications between the individual and the FAA, and electronic submittal of supplemental medical information to more than just the current AME. We would also like to be able to authorize clinicians other than the AME of record to review medical records, with the consent of the individual, of course. The process to develop a new, modern platform is underway, and we hope to have many features in place by the end of next year. At the same time, we will be implementing new security features necessary to protect airmen medical information.

The new MedXPress is envisioned to be a full-featured portal for airmen medical certification. Our goal is to provide airmen access to their medical records with visibility of information comparable to current EMRs and the current paper-based medical record. Correspondence will be received electronically, mitigating the transit and processing time for paper-based correspondence. We will continue paper notifications for the foreseeable future, as this is a statutory requirement dating back to the 1950s. Nonetheless, electronic communications should also significantly reduce the likelihood of communications crossing in the mail. Once the new system is mature, pilots and AMEs

will be able to electronically upload FAA-requested documentation, such as detailed clinical progress notes and test results, directly to the FAA.

We also envision improving the approach to how airmen fill out FAA Form 8500-8. We plan to embed links in the online application form that take the applicant directly to the section of the AME Guide that outlines what information is needed for consideration. While the AME Guide is intended for physicians, this should aid the pilot when communicating to their personal physicians what information will be needed for review. We have also developed a pamphlet to guide the pilot through the medical application process. This will complement the checklist recently developed by our industry partners. View the pamphlet at bit.ly/AMEKnowB4Ugo (PDF).

Our goal is to help the airman, working together with their AME, to not only understand what information they must provide, but also obtain and provide it early, preferably at the time of application. Whenever possible, we want the airman to leave the AME office with an issued medical certificate. In cases where the AME must defer to the FAA, the new MedXPress will assist the airman in submitting a complete application, speeding up the review process.

Look for more information in the coming months as these efforts mature.

EAA AIRVENTURE OSHKOSH 2025

FAA SAFETY CENTER FORUMS

July 21–26, 2025

	0830 – 0945	1015 – 1130	1200 – 1330	1400 – 1530	1600 – 1715	
MONDAY JULY 21	**Resilience in Unexpected Weather** Dr. Ian Johnson FAA	**Seaplane Decision Making Air / Land / Water Operations** Steve Guetter Advanced Flight Training	**Suspected Unapproved Parts** Roy Resto AIM Solutions Consulting	**Flying In the Colorado Mountains** Bill Standerfer Colorado Pilots Assoc.	**The Next Chapter in Pilot Deviation Investigations** Lee Stromenger FAA	**Join us for daily forums at the FAA Safety Center.**
	WINGS: BK1	*WINGS: BK2*	*AMT: 1.0*	*WINGS: BK3*	*WINGS: BK3*	
TUESDAY JULY 22	**What's in the Bag? Is it Dangerous Goods?** Victoria Lehman FAA	**How to Talk to ATC** Heather McNevin ATO Retired	**Aircraft Battery Airworthiness** Chris Holder Concorde Battery	**Aeromedical Update** Dr. Susan Northrup FAA	**Satellite Navigation Resiliency: Being Prepared Counts** Dr. Vince Massimini SixT's / MITRE	**What's Replacing Avgas? Find Out Tomorrow!**
	WINGS: BK3	*WINGS: BK3*	*WINGS: BK3* *AMT: BK3 1.0*	*WINGS: BK3*	*WINGS: BK3*	
WEDNESDAY JULY 23	**How to Avoid a Fighter Intercept** Trevor Boswell NORAD	**Just Because It's Legal, Doesn't Mean It's Smart** Sarah Rovner FAA Designee	**US Transition to Unleaded Avgas** Chris D'Acosta Swift Fuels	**Straight Talk About Aviation Safety** John & Martha King Schools	**No Session**	**Seaplane Transition Tomorrow!**
	WINGS: BK3	*WINGS: BK3*	*WINGS: BK3:* *AMT: 1.0*	*WINGS: BK1*		
THURSDAY JULY 24	**General Aviation Awards** *CFI of the Year *AV Tech of the Year *FAASTeam Rep of the Year	**The Fun and Challenges of Flying Seaplanes** Steve Guetter Advanced Flight Training	***No Session*** **Meet the FAA Administrator** **@ Theater in the Woods**	**Aircraft Tire Care and Maintenance** Mary Beth Widak Goodyear Tire	**Accident Investigation Updates** Pat Hempen AirHempen Cons	**GA Awards and Theater in the Woods Today!**
		WINGS: BK2	***No Session***	*WING: BK3* *AMT: 1.0*	*WINGS: BK3*	
FRIDAY JULY 25	**Oil and Oil Filter Analysis: An Overview** Wayne Odegard AvLab	**Return SAFELY to the Airport After Engine Failure on Take Off** Dr. George Bolon Win Air Aviation	**Weather or Not to Fly** Jeff Arnold Leidos Flight Service	**Secrets Only Pilots Know About Airports** Tom Slater FAASTeam Rep	**Decision Making in a Crisis** CDR Kirk Lippold Lippold Strategies LLC	**"Make Better Decisions Through Education" day!**
	AMT: 1.0	*WINGS: BK3*	*WINGS: BK1*	*WINGS: BK2*	*WINGS: BK1*	
SATURDAY JULY 26	**Aircraft in Distress: Unexpected MX Enroute** Tom Slater FAASTeam Rep	**ODPs and SIDs** Ed Verville FAA Designee	**Can Weather Aggregation Benefit GA Pilots?** Gary Pokodner FAA	**UAS vs Manned Aircraft in the Airspace** Greg Reverdiau Pilot Institute	**Zero to 16 Degrees, An AOA story** Mark Korin Alpha Systems	**Seaplane Base Forums Monday thru Friday ONLY!**
	WINGS: BK3	*WINGS: AK2*	*WINGS: BK2*	*WINGS: BK1*	*WINGS: BK2*	

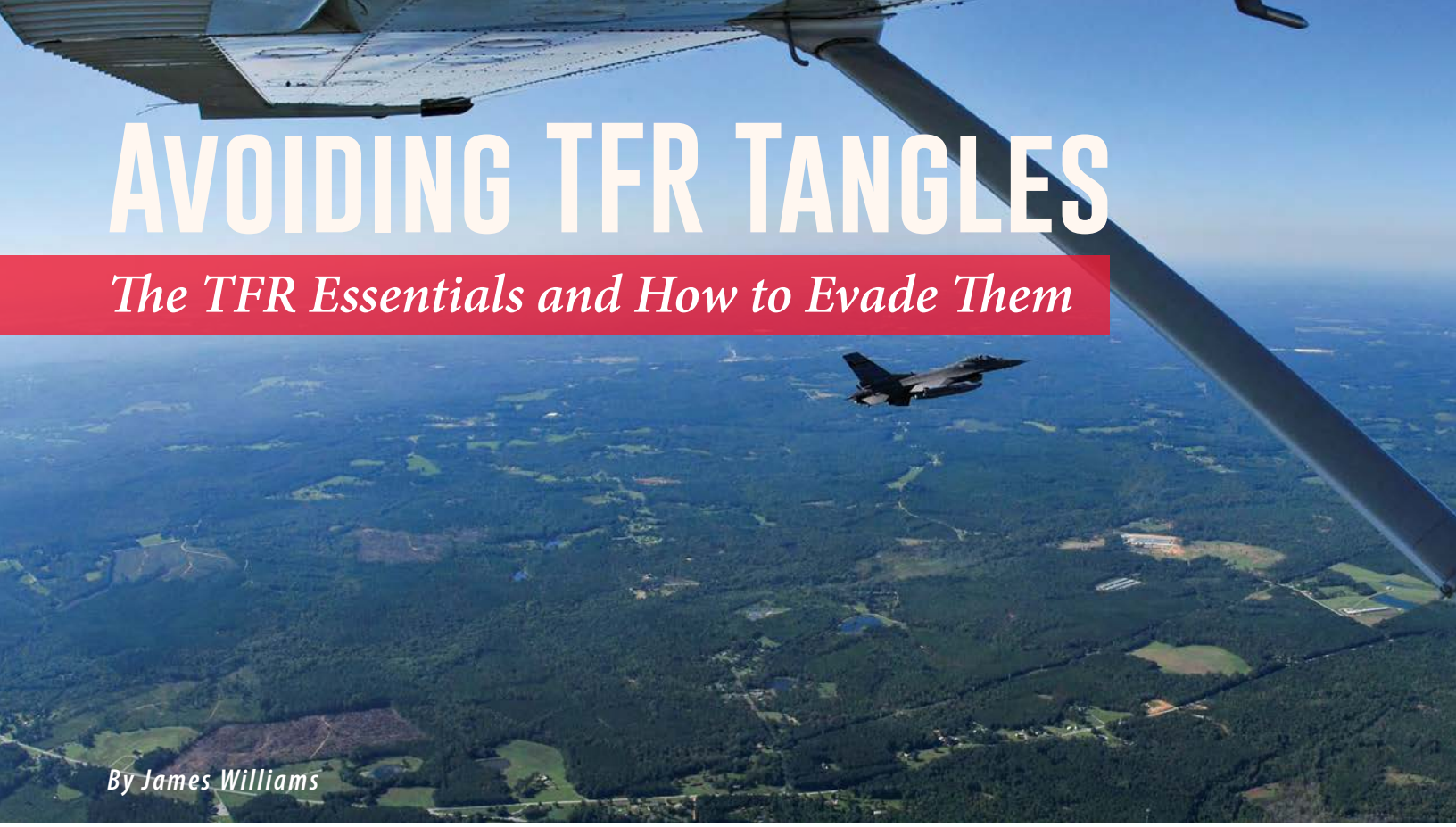
FAA Forums Open Daily at 8:30 a.m. unless otherwise noted.

SCHEDULE IS SUBJECT TO CHANGE.

For updates, scan the QR code to the right or go to AirVenture forums at bit.ly/FAA Forums.

Spotlight on Safety **verticalavi.org/safety/spotlight-on-safety**

VA SAFETY



AVOIDING TFR TANGLES

The TFR Essentials and How to Evade Them

By James Williams

(Civil Air Patrol photo)

Growing up in the rearguard of Gen X, I got to experience the world before and after many changes: the Cold War, the internet, smartphones, and many others. This doesn't just apply to world history and social trends but to aviation as well. I've seen general aviation (GA) airplanes go from being almost always aluminum construction to the most produced model of aircraft having a composite airframe. Glass cockpits went from being the near exclusive preserve of fighter jets and new airliners to being broadly available in GA. Earning my instrument rating in 2001, I feel like I was perhaps the last pilot to do so without extensive use of GPS. While GPS existed, it wasn't the dominant form of navigation it is today. There was still a very sharp distinction between VFR and IFR GPSs, with the latter being somewhat rare. Although the year 2001 stands out in my memory for a more significant event as well, it brought about another major change, both for aviation and the world.

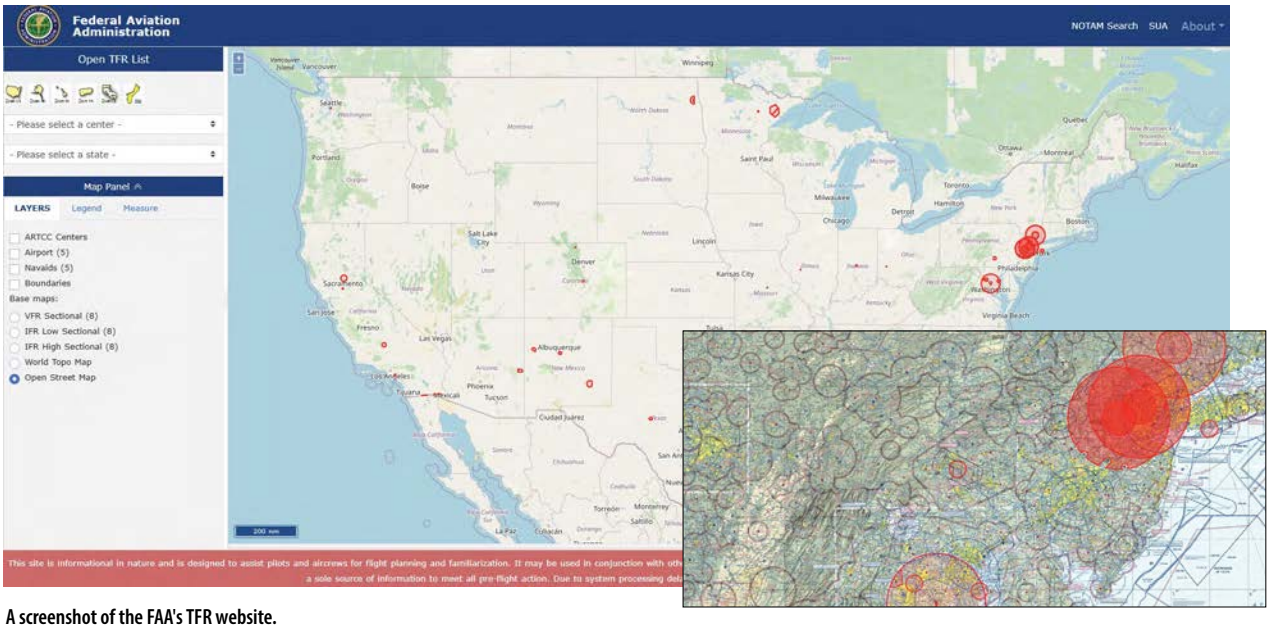
The changes to aviation stemming from 2001 are too numerous to mention here. Our focus for this article is on temporary flight restrictions or TFRs. While TFRs certainly existed long before 2001, they were not as visible a part of my flying experience. For example, I spent some of my pre-2001 flying time in the Washington, D.C., area, and you could actually fly VFR in the area below class B airspace between Dulles International Airport (IAD) and Reagan National Airport (DCA) without talking to anyone. It's hard to imagine doing that today.

There are a variety of reasons why we need TFRs. With increased safety and security concerns, in addition to growing NAS usage, TFRs have become a fact of flying. It's worth taking some time to learn about what they are and how we can safely avoid them. Let's take a closer look.

> **A TFR is defined as a regulatory action issued via the NOTAM system to restrict certain aircraft from operating within a defined area, on a temporary basis, to protect persons or property in the air or on the ground.**

Map to Knowledge

The best place to start our journey of learning is Advisory Circular (AC) 91-63D, *Temporary Flight Restrictions (TFR) and Flight Limitations*. This AC provides both immediate definitions and a good list of references for you to dig deeper if needed. So, what is a TFR? While there are a variety of types, a TFR is defined as a regulatory action issued via the Notice to Airmen (NOTAM) system to restrict certain aircraft from operating within a defined area, on a temporary basis, to protect persons or property in the air or on the ground. But the dimensions of a TFR and its other properties will vary based on the specific circumstances. The controlling regulation will also vary based on the type of TFR being issued.



A screenshot of the FAA's TFR website.

Under Title 14, Code of Federal Regulations (14 CFR), there are seven different types of TFRs controlled by seven different parts of the regulations:

- TFRs in the vicinity of disaster/hazard areas (91.137),
- TFRs in National Disaster Areas in the state of Hawaii (91.138),
- emergency air traffic rules (91.139),
- flight restrictions in the proximity of the President and other parties (91.141),
- flight limitations in the proximity of space flight operations (91.143),
- management of aircraft operations in the vicinity of aerial demonstrations and major sporting events (91.145),
- and special security instructions (99.7).

They broadly fit into the categories of security (91.138, 91.141, 91.145, and 99.7) or separation (91.137, 91.139, and 91.143).

Secure Space

One of the primary goals of the national airspace system (NAS), alongside efficiency, is safety, which includes the safety of those not participating on the ground. And this goes double for large events with lots of people crowded into a small area. Those concerns aren't just for innocent actors but for more malevolent ones as well. This is also true when dealing with VIP movements, where proper security calls for the exclusion of non-participating aircraft from certain areas that are not covered by static restricted or prohibited areas.

Given the nature of these security TFRs, you have a very high likelihood of being intercepted (more on that later). While these violations are almost always innocent mistakes, the assigned military and law enforcement units cannot take that risk and must treat each one seriously and respond accordingly. This reinforces the need to increase awareness of these TFRs and avoid them, especially if you fly in an area where they are common.

Separation for a Cause

Another key driver of TFRs is to separate aircraft from hazards, potential hazards, emergency response, or system issues. Disaster areas are a common reason for a TFR, and they may represent not only a direct hazard to safety but also a hazard to the first responders in the air and on the ground. The hazard doesn't need to be a large-scale disaster; it could be something smaller, like a local police department using drones or helicopters for law enforcement operations, or a missing persons search. In addition to TFRs in some emergency response situations, the FAA may employ Airspace Coordination Areas (ACA) to coordinate beyond normal TFR boundaries. An ACA is an advisory for very specific circumstances — a heads up about an unusual situation and/or congestion that pilots should be aware of. An ACA does not restrict airspace but provides pilots important guidance.

Space operations, which are covered by section 91.143, are another increasingly common reason for TFRs. The rapid growth of the commercial space industry has led to a massive increase in the number of space launches from 12 in 2014 to 157 in 2024, which in turn leads to more, much-needed TFRs. The development of new space launch systems is extremely complex and technically challenging. The FAA works to lower the impact of these operations on the larger aviation community (see Let's Give 'em Some "Space" from our May/Jun 2023 issue at bit.ly/44FsnIy), but there are safety risks from allowing non-participating aircraft too close to space operations. The FAA may also designate Debris Response Areas (DRA) to protect aircraft from potential debris falling from spacecraft during launch. These are generally only activated if there is an anomaly during the launch and end once the debris has fallen to Earth.

Emergency air traffic rules covered by section 91.139 are restrictions that pertain to the FAA being unable to operate the air traffic control system. This would be in response to an emergency situation or condition and would be issued with immediate effect. When normal flight operations consistent with the required levels of safety could be conducted, this would sunset.

A little prevention goes a long way towards warding off TFR entanglements.

All of these are examples of TFRs that are designed to keep you and other participants safe by keeping you apart. But with the nature of the circumstances that give rise to some of these TFRs, you may find yourself unintentionally stumbling into one of these areas, and possibly

(Civil Air Patrol photo)

Two Air Force F-16 fighter jets from the District of Columbia Air National Guard practice intercepting a small Civil Air Patrol aircraft during a training exercise. (Civil Air Patrol photo)

even intercepted by government aircraft. In that case, you should follow the published intercept procedures in the *Aeronautical Information Manual* (AIM) section 5-6-13 (bit.ly/AIM5613). Regardless of whether it's a separation or security TFR, you may be intercepted if you violate the protected airspace.

Enjoying a Tangle-Free Life

No one likes getting a phone number to call after a flight, much less an unscheduled air show with you as the show center. To avoid situations like these, let's break things down into two layers that I'll call strategic awareness and tactical avoidance. Strategic awareness is predicated on a more general awareness of your environment. Looking at the kind of events or installations mentioned above, consider how they interface with your flights. For example, is there an active spaceport near you? This used to be largely limited to people in Florida or California, but in the last few years, more and more spaceports are conducting regular launches, and some are co-located with airports. Another example would be events or disasters in your area or along your common routes. Where is the Super Bowl this year? Is there an active recovery operation from a storm that recently hit your area? These and many other questions like them can prime your brain to think about such things and flag them for later.

On the tactical avoidance level, you should keep those strategic concerns in mind and apply them as part of your briefing and planning process. For example, if there is a local spaceport, does it have a launch planned in the vicinity of your flight, and can you reroute to avoid it? Is there a large event that you may want to plan around? In the case of natural disasters, it's important to remember that they can have an impact on logistics and supplies like fuel. So, planning a wide berth from such events can avoid TFRs and improve your refueling stop experience.

When it comes to planning, the easiest way to avoid entanglements is to use a system that employs official FAA data — most of the major electronic flight bag (EFB) and planning systems do. We can't make specific recommendations for a private service, but we can recommend using 1800wxbrief.com as the contract provider for FAA's Flight Service. Another FAA resource is tfr.faa.gov. This site allows you to search by a number of criteria or to view a map of TFRs if you want to check your route of flight at a glance.

With our initial planning done, there are a few more things we can do to decrease tangles. If you are instrument rated, you can opt to fly IFR. In addition to reducing airspace issues, you also get a chance to practice IFR procedures. For VFR pilots, it's a good idea to use flight following when available. Using EFB systems may provide additional support, but pilots should understand how the features are implemented and what the update rate is. TFRs can pop up with little to no notice, which is why it is handy to be in touch with ATC if possible.

No one wants to get intercepted. It's stressful and poses a risk to your pilot certificate and ratings as a rule. As we can see, a little prevention goes a long way towards warding off entanglements. Working on our strategic awareness can in turn inform our tactical avoidance and planning. The idea isn't to add any significant amount of effort to your planning process but to help understand what kind of circumstances or events might trigger a TFR and let that "run in the background" for when you are planning your flight. While TFRs may be a bigger part of aviation today, we also have much better technology to help avoid them. The ultimate goal is a safe, smooth, tangle free flight.

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

LEARN MORE

AC 91-63D, *Temporary Flight Restrictions (TFR) and Flight Limitations*
bit.ly/AC91-63D

TFR website
tfr.faa.gov

"Give'em Some Space" – *FAA Safety Briefing*, May/Jun 2023
bit.ly/44Fsnly

Flight Service
1800wxbrief.com

North American Aerospace Defense Command's GA webpage
norad.mil/General-Aviation

SUBVERTING SAFETY DRIFT

PROPER CHECKLIST USAGE COMBATS COMPLACENCY

By Rebekah Waters

We've reached the midpoint of the year. How are your New Year's resolutions going? If you're like most people, you've likely drifted away from the good habits you established in January and back into your old ways without even noticing. The same thing can happen with the practices and procedures that keep us safe while flying. This gradual deviation from established safety procedures and best practices — or safety drift — is a subtle foe.

Drifting Towards the Danger Zone

Safety drift slowly chips away at good habits and established safety practices. It's not usually caused by intentional recklessness — rather, it results from small compromises made over time. In his article "The Safety Space and Practical Drift," Bob Baron, president and chief consultant of The Aviation Consulting Group, describes safety as a continuum with baseline performance on the left, accidents on the right, and a "safety space" in between. Pilots can unknowingly drift across this space when factors like time pressure and overconfidence combine and allow complacency to override safety norms. Let's imagine a scenario that illustrates how even the safest pilots can drift into the danger zone without noticing.

Sean is a very safe pilot with thousands of flight hours and a spotless record. Today, he's flying to a business meeting on a tight schedule. He leaves home with just enough time for a proper preflight, but traffic is bad. He checks his GPS and sees that the traffic will only add a few minutes to his trip. It's not too bad; he might still make it.

Arriving at the airport a few minutes late, he starts his preflight inspection. He decides to skip the checklist and do it from memory. It will be okay — just this once. But deep down, he knows this is becoming a pattern. I'll be fine, he thinks. I've pulled it off every other time.

During takeoff, his stomach drops. The control wheel won't move aft. He doesn't have time to wonder how he could have forgotten to remove the control lock. He quickly tries to remove it on the go, but it seems to be stuck. Time has run out. He aborts takeoff and crashes through a fence, stopping just short of some trees. Realizing how close this call was, he wonders what went wrong. How could such a seasoned pilot like him miss something so basic?

The answer: complacency.

Complacency is a feeling of self-satisfaction, often without awareness of potential dangers. It creeps in gradually, especially when everything seems to be going right. General aviation pilots are especially vulnerable due to the routine and repetitive nature of many flights and a strong reliance on positive past experiences. After all, "nothing's

gone wrong in years" can lull even the most experienced pilot into skipping steps.

Some factors that contribute to complacency include:

- *Repetition and routine:* The more often we do something successfully, the more likely we are to believe we can skip steps without consequence.
- *Familiarity bias:* Long-term comfort with equipment or procedures can reduce vigilance.
- *Success-based shortcuts:* Repeatedly getting away with unsafe practices reinforces the belief that such shortcuts are "safe enough."
- *Cognitive overload or distractions:* Time pressure, goal fixation, "get-home-itis" or multitasking can lead to omissions and careless mistakes.

When complacency takes hold, pilots might ignore or miss crucial steps in any phase of flight. This could include not checking NOTAMs or conducting thorough weather briefings; forgetting to set trim or flaps as required; or skipping pre-landing checks.

If you're thinking — this would never happen to me, consider the old adage: If you think it can't happen to you, it already has. We've all had those "just this one time" or "everything worked fine last time" thoughts. If safety drift is inevitable, what can we do about it?

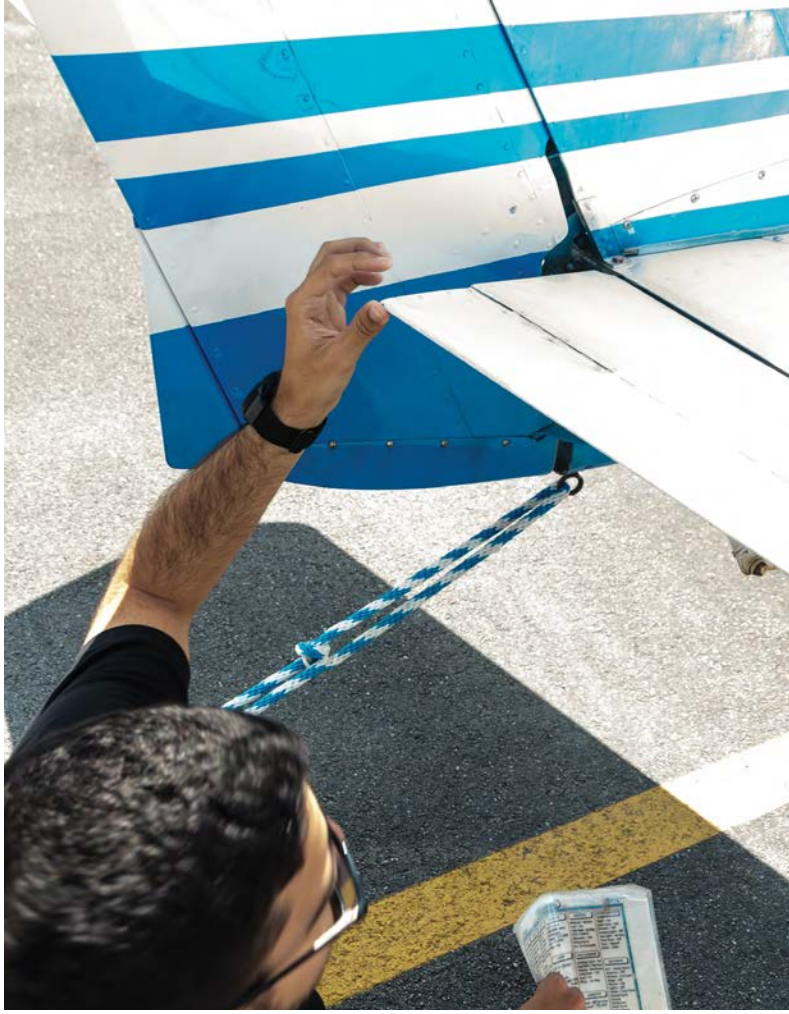
Combating Complacency

Complacency, in general, is a dangerous mindset, and in aviation, it can have deadly consequences. Enter checklists: aviation's greatest defense against human error. The widespread use of formalized checklists began after the crash of a prototype Boeing B-17 on Oct. 30, 1935. The pilots forgot to disengage the elevator gust locks, and the plane crashed during takeoff. This tragedy led directly to the development of the first flight checklist — a structured tool to ensure critical items aren't missed during any phase of flight. Today, checklists serve several vital functions:

- *Standardization:* Checklists ensure every safety step is completed consistently, regardless of the pilot's experience, fatigue, or distractions.
- *Memory aid:* Even the best memory can fail under pressure. Checklists provide a reliable backup.
- *Safety reinforcement:* Checklists anchor pilots to a systematic, methodical process.
- *Drift correction:* Using checklists helps realign pilots with established procedures, minimizing safety drift.

Basically, checklists are a fundamental part of flight safety and your number one tool when it comes to combating complacency.

During preflight, a checklist ensures pilots inspect an aircraft's components and systems for proper operation and structural integrity and allows them to verify airworthiness. On taxi and during flight, they help ensure the airplane and engine are functioning properly and are configured appropriately for each phase of flight. Checklists provide important structure to the things we check often, usually in a prescribed order of priority. Bottom line: Checklist usage is a sound and proven way to reduce errors and improve flight safety.



During preflight, a checklist ensures pilots inspect an aircraft's components and systems for proper operation and structural integrity. (Photo by Oscar Socarras)

If your checklist use has been waning, pull them back out and use them every time you fly, for every phase of your flight. If you're starting from scratch, consider reviewing your aircraft's Pilot's Operating Handbook (POH). It is likely to include checklists for preflight, engine start, taxi, cruise, descent, landing, and shutdown. Go one step further by developing personal checklists tailored to your flying habits, environment, or aircraft quirks. The FAASTeam's "Advanced Preflight" guide is an excellent example of this (bit.ly/FAAST_pamphlets). Never rely solely on memory — even for tasks you've done hundreds of times. The importance of using physical checklists cannot be overstated. As Jennifer Caron, former copy editor of this magazine, puts it, "Checklists are your friends — use them!"

bit.ly/FAAST_pamphlets

Highway to the Safety Zone

Safety drift is a slow process. But proper checklist practices get you back on the highway to the safety zone. Incorporating checklists into a broader safety mindset is essential. Training, mentoring, and ongoing education reinforce the importance of discipline in safety. Programs like the FAA's WINGS Pilot Proficiency Program provide pilots with tools to recognize hazards, manage risks, and ensure their operations are the safest possible. Go to bit.ly/WINGSPPP to learn more about this important safety resource.

Call To Action

Combating complacency and staying in the safety zone is everyone's responsibility. At the General and Business Aviation Safety Call to Action in early March, Acting FAA Administrator Chris Rocheleau reminded us:

"Safety is a collective effort that requires constant, proactive collaboration among all stakeholders. Complacency is the enemy of safety, and we need to be vigilant to address emerging risks before they become problems."

What steps can you take today to answer this call to action?

Use the manufacturer's checklists from your aircraft's POH and augment them with your own. Don't take safety shortcuts — especially under pressure. Take time to reflect on near-misses and learn from others' stories. Revisit the FAASTeam safety resources regularly.

If you're still thinking "this doesn't apply to me," consider this story from FAA employee, Jean Hardy. Hardy is a commercial pilot and flight instructor with seaplane, instrument, and multiengine ratings who works for the FAA's Training and Certification Group in the General Aviation and Commercial Division. She earned a Wright Brothers Master Pilot award in 2024 for 50 years of safe flight operations. Even Hardy is not immune to safety drift. When asked about using checklists, she shared this story:

"I learned a valuable lesson about the importance of checklists the hard way. I once forgot to remove the pitot tube cover on my Pitts S-1C. Missing that on my preflight meant I had no airspeed indication for the whole flight. I really sweated the entire time, especially during the landing. Landing a Pitts is like spitting on a hot griddle — and with no airspeed indication? Terrifying. Never again will I skip using a checklist!"

Everyone is susceptible to safety drift. Make checklists your copilot, so you'll always stay in the safety zone!

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

LEARN MORE

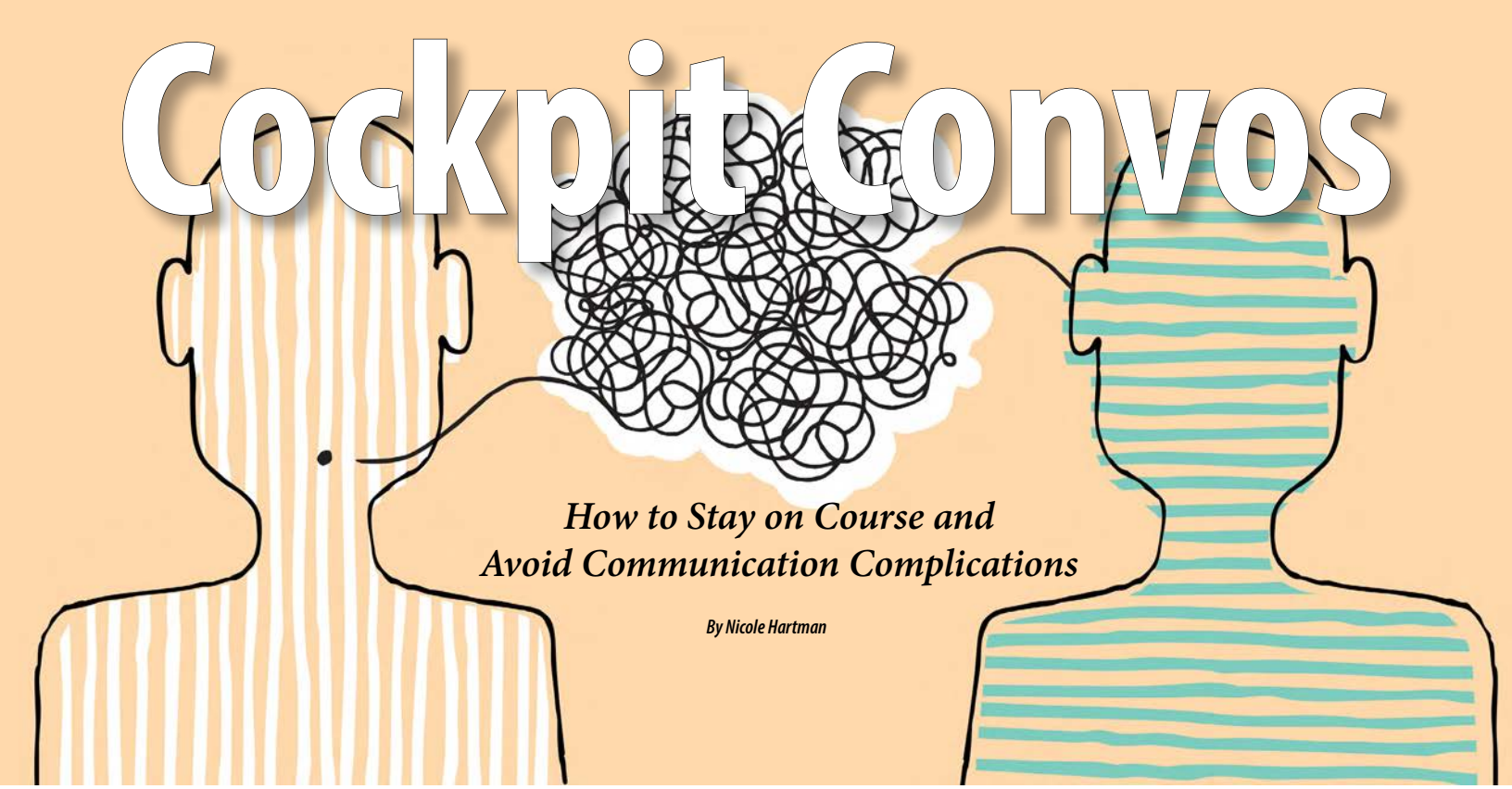
FAASTeam Notice: NOTC3401, *A Check Up on Checklist Customization*
bit.ly/3E0jpBv

FAASTeam Activities, Courses, Seminars & Webinars
bit.ly/47y9r0L

Advanced Preflight After Maintenance Factsheet
bit.ly/47B4u7S (PDF)

Flying Proficiency in 57 Seconds, 57 Seconds to Safer Flying Video
bit.ly/FlyingProficiency

Cockpit Convos



How to Stay on Course and Avoid Communication Complications

By Nicole Hartman

It's not uncommon for my teenage daughter to come home from school and tell me that she "ate her AP English presentation" or to reply with "it's giving" when I ask for her thoughts on my new shirt [insert confused emoji]. While we're both technically speaking the same language, the communication process breaks down when I can't comprehend her feedback. If I can't decipher what she meant through context clues, I often have to ask follow-up questions to make sure I understand. Typically, we have a good laugh about it (mostly her laughing at me) and continue with our day. And while it's not the most efficient way to communicate, the meaning eventually gets delivered, and there are no consequences (besides my bruised ego) because of our messaging mix-up. But the same cannot be said regarding aviation communication.

Vocabulary and mutual comprehension between the sender and receiver during all the phases of flight are paramount in aviation. So, let's take a look at the basic elements of aviation communication. And for those of you interested in the translation, my daughter did well on her presentation and liked my outfit.

The Language of Aviation

Although English was made the common language of world aviation in 1951, accidents and incidents where communication was a contributing factor are still common today. Even at the highest levels of proficiency in the flight deck and air traffic control (ATC) facility, there can be misunderstandings.

No nation speaks it, but all pilots and air traffic controllers must understand it — the language of aviation. The cockpit and ATC facility are complex systems characterized by numerous concurrently operating and interacting communication channels between people and between people and machines/computer systems. Needless to say, there's a lot going on and many opportunities for misunderstandings. Air traffic controllers use voice over radio to communicate with pilots to fulfill their responsibility for maintaining the safety and efficiency of air traffic. And pilots should follow the instructions and clearances issued by air traffic (unless the instructions and clearances have potentially negative occurrences and put the aircraft in danger).

Effective pilot-air traffic communication depends on the appropriate use of aviation vocabulary (i.e., phraseology per the *Pilot/Controller Glossary*, (bit.ly/PilotControllerGlossary) by both pilots and air traffic controllers). To maximize the capacity of the communication channel while reducing the risk of misunderstanding, pilots and controllers must use standard aviation phraseology. When air traffic provides verbal commands to the pilots, the pilots must repeat all instructions that could affect the aircraft's motion, such as altitude, speed, or direction instructions. This repetition of the air traffic clearances by the pilot (readback) provides instant feedback to the controller that their message has been understood and accepted. If not, the controller should immediately correct any discrepancies the readback reveals.

Messaging Mistakes

Communication errors in the cockpit can have serious consequences for flight safety and performance. They can result from various factors, such as language barriers, workload, stress, fatigue, noise, distractions, or lack of

standardization. Here are a few of the most common communication errors and how to avoid or mitigate them.

Language Issues

One of the most obvious sources of communication errors is the language barrier. Although English is the global aviation language, it might not be the native tongue for all pilots. This could lead to misunderstandings, misinterpretations, or incomplete transmissions. Fluency in English is not a requirement; however, pilots must be proficient in English as a "general spoken medium" (i.e., a specified level of vocabulary and grammatical knowledge). To prevent language issues, you should use plain and clear language, avoid speaking too quickly, avoid slang or jargon, repeat or confirm important information, and ask for clarification if in doubt.

Phraseology Errors

Another common communication mistake is the incorrect or inconsistent use of aviation vocabulary and phraseology. Aviation Phraseology is the standardized set of words and expressions used in aviation communication to convey specific meanings and instructions. It is designed to reduce ambiguity and enhance efficiency. However, some pilots and controllers may deviate from the standard aviation phraseology, either intentionally or unintentionally, which can create confusion or errors. Ironically, this can be a challenge for native English speakers who might become complacent with their words. To avoid phraseology errors, you should review the *Pilot/Controller Glossary* and never use jargon or slang in air traffic communications. Regular training and reinforcement of proper phraseology can also be valuable to maintain a safe and efficient communication environment. Check out the FAA's *From the Flight Deck* video that explores some of the words and phrases you might encounter when operating on the surface of an airport or preparing to land (bit.ly/3FYZgFX). This phraseology video is the highest viewed piece in the series, garnering 50K views and highlighting the importance of this topic.

Call Sign Confusion

Confusion or misidentification of call signs can also lead to communication issues. Call signs are the unique identifiers assigned to each aircraft. They are essential for coordinating and managing air traffic. However, sometimes call signs can be similar or identical, which can cause pilots or air traffic controllers to respond to the wrong transmission or miss their own. To prevent call sign confusion, you should use the full call sign when initiating a transmission, listen carefully for your call sign, and report any call sign similarity or duplication.

Readback Errors

Readbacks can also present a challenge. Readbacks are the verbal confirmations of instructions or information received from controllers or other pilots. They are crucial for ensuring mutual understanding and compliance. However, sometimes pilots may forget, delay, or incorrectly read back the information, which can result in non-compliance, deviation, or conflict. Sometimes you may simply misunderstand what was said (perhaps due to pronunciation, word stress, rhythm, or intonation). To avoid readback errors, you should always read back instructions using the exact same words or information that affect your flight. Use the exact words and phraseology stated by ATC, and check for ATC acknowledgment. You can refer to Order JO 7110.65W for phraseology used by ATC (bit.ly/JO_711065).

Commonly Misused Phrases	
Copy vs. Roger	"Copy" means you've received the message, not that you'll comply with the instruction. "Roger" means you understand and will comply.
Traffic in Sight vs. Have it on TCAS	"Traffic in sight" means you visually see the other aircraft, relieving the controller of separation responsibility. Saying "have it on TCAS" is not standard and can create confusion.
Say Again vs. Standby	"Say again" is used when you don't understand the message and need it repeated. "Standby" means you're busy and can't respond immediately but will follow up.
Mispronouncing Numbers	Using words like "nine" instead of "niner" can lead to confusion with "five." Similarly, using "double" or "triple" instead of pronouncing each digit separately can be misunderstood.
Failing to Acknowledge Frequency Changes	Changing frequencies without acknowledging the instruction could leave the controller unsure if the pilot received the instruction, especially if the radio connection is lost.

Expectation Bias

You can increase how fast you hear and improve what you understand if you know what to expect during a transmission. Air traffic instructions mostly consist of numbers preceded by keywords that tell you what the numbers mean. For example, "climb and maintain..." is always followed by an altitude assignment. However, be careful that you're not just hearing what you want (or expect) to hear. Expectation bias is when a person's prior knowledge or expected outcome influences their resulting perceptions, interpretations, and decisions. Make sure you are actively listening (i.e., listen to comprehend, don't just wait for your turn to speak) when receiving messages from air traffic controllers, and don't assume you know what they're going to say. Listening actively helps to ensure that you fully understand the intent of what is being said.

Interruptions and Distractions

Finally, interruptions and distractions pose significant risks to quality communication. Interruptions and distractions are any events or factors that disrupt or divert your attention from the primary task of flying or communicating. They can be internal or external, such as alerts, alarms, checklists, passengers, weather, traffic, or personal issues. They can affect your ability to listen, process, or transmit information effectively and accurately. To minimize interruptions and distractions, you should prioritize and manage your tasks, use sterile cockpit procedures, and avoid multitasking. Maintaining a focused communication protocol and emphasizing concise exchanges are crucial to mitigate these errors and enhance overall aviation safety.

Over

Communicating using slang might work for my daughter and me at home, but casual dialect is "big yikes" (bad) for effective communication between pilots and controllers. By adhering to standardized phraseology and maintaining

a clear, concise exchange of information, pilots and controllers can work collaboratively to navigate the complexities of modern airspace. Safe, efficient communication is a shared responsibility.

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

LEARN MORE

Aeronautical Information Manual, Chapters 2 and 4
bit.ly/RadioComs

FAASTeam Radio Communications Phraseology and Techniques
bit.ly/CommsPhraseology

"How to Talk Like a Pilot – The Basic Elements of Aviation," *FAA Safety Briefing*, Nov/Dec 2025
bit.ly/437Mxgs

"The Importance of Speaking Plane-ly," *FAA Safety Briefing*, Mar/Apr 2025
bit.ly/44K0jXP

From the Flight Deck Live: A Pilot Phraseology Workshop
youtube.com/live/qwA2d2n0eg8

Pack a Safety Sandwich Before Every Flight

ESSENTIAL INGREDIENTS FOR RISK MANAGEMENT AND FLIGHT PERFORMANCE

By Tom Hoffmann

I'm a pushover for a good sandwich. Roast beef and Swiss on a French baguette is my absolute go-to lunchtime favorite. Of course, quality ingredients, proper construction, and attention to detail matter when building the perfect sandwich. Skimp on any and you could easily wind up with a sub-par sub.

While it may be a somewhat quirky comparison, building a good sandwich and conducting a safe flight share some common ground. Indulge my culinary comparison for a moment if you will.

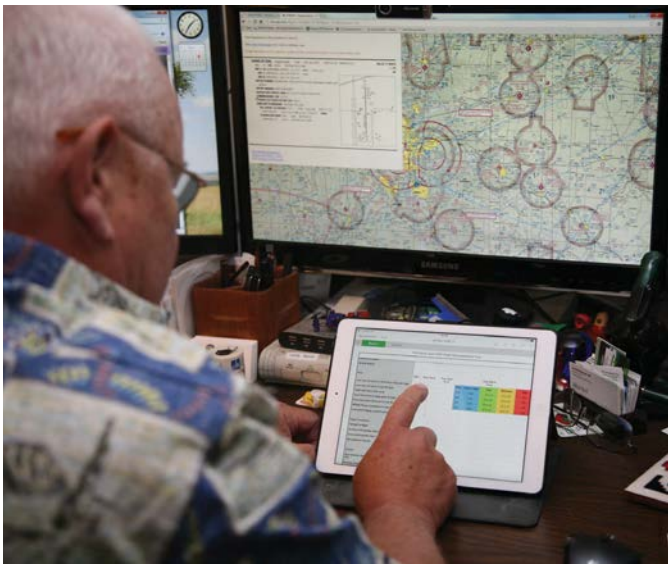
The Bottom Slice

A sandwich without good bread is just, well … not really worth eating. The bottom slice is particularly important, serving as the foundation for the rest of your sandwich. Without it, you may very well have a soggy mess on your hands. The same can be said for preparation when it comes to flying. With a good foundation of diligent research and preparation, you'll be maximizing your chances of having a safe, efficient, and enjoyable flight.

Risk management is key to building a solid foundation for a safe flight. Because every flight has some level of risk, it is critical that pilots are able to differentiate, in advance, between a low-risk flight and a high-risk flight. Pilots must also be able to establish a review process and develop risk mitigation strategies. A flight risk analysis tool (FRAT) is an excellent way to accomplish all of this. A FRAT enables proactive hazard identification, is easy to use, and can visually depict risk. It is an invaluable tool in helping pilots make better go/no-go decisions and should be a part of every flight.

What's critical about a FRAT is that it allows you to pause and review risk before the Hobbs meter starts running and the pressure of getting on your way is already swaying you to proceed. Simply running a calculation in your head might lead you to miss or severely underestimate risks you could encounter. Our own personal biases can also work against us, convincing us it's ok to proceed on a flight based on previous experience, e.g., "I was able to land just fine with an 18-knot crosswind last time." This normalization of deviance can be deadly. A FRAT forces the pilot to instead document the assessment and calculate an actual score that is much harder to deny or cast aside. More importantly, it lays the groundwork for managing risks with proactive and recorded mitigation strategies.

So, what does a FRAT look like and how does it work? FRATs come in different formats. Some might be simple app-based checklists, while others can be more detailed software applications. The FAA Safety Team (FAASTeam) has an online FRAT tool (bit.ly/FRAT_Tool) that considers



A FRAT enables proactive hazard identification, is easy to use, and can visually depict risk.

27 different conditions you might encounter on a flight and your ability to safely cope with them based on your individual skill and experience. Keep in mind that FRATs are not able to anticipate all hazards that might impact a particular flight, but they do cover many common areas that can help you get started in effective safety risk management. For example, it may ask you how much rest you've had, how much time you've had in the aircraft, and what the weather conditions are for your destination. Based on your answers, a total risk score is calculated. With many FRATs, your score will fall into three risk categories: green (low), yellow (medium), and red (high).

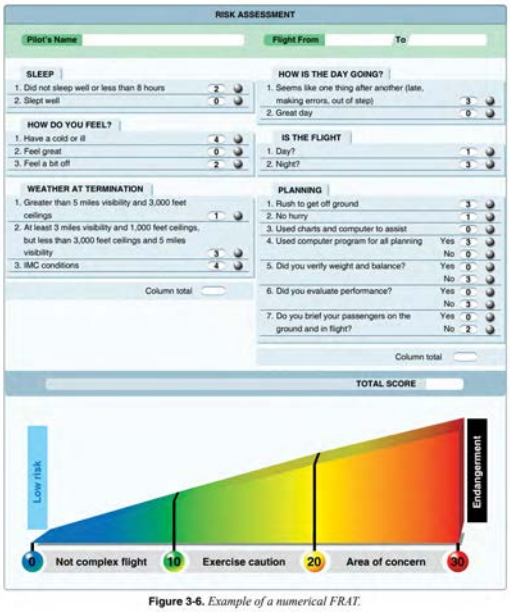


Figure 3-6. *Example of a numerical FRAT.*

An example of a numerical FRAT.

Green Means Go: Or Does It?

With a clear in-the-green score, you might be tempted to blast off with unabated zeal. Not so fast. A FRAT is not meant to make your go/no-go decision for you. It is merely a tool to help you plan your flight and think through a more complete range of hazards and risks. When using a FRAT, it's a good idea to create numerical thresholds that trigger additional levels of scrutiny prior to a go/no-go decision for the flight. For example, a score that's on the high end of the green scale may still warrant further analysis. You should consider what the highest scoring risks are and attempt to mitigate those risks.

Yellow: Mitigation Needed

If your score falls in the yellow, try to mitigate some of the higher-scoring items. That might entail waiting for the weather to improve or switching to an aircraft you have more experience with. If the score is still in the yellow, bring in the opinion of a designated "contact" person, such as a flight instructor or an FAASTeam Representative. They may be able to help you think of ways to further mitigate some of the risks of your flight.

Red: No-Go

If your score falls in the red zone, you should seriously consider cancelling the flight unless the risks involved can be safely mitigated. It's important not to allow the external pressures involved with carrying on with the flight (e.g., attending your son's graduation ceremony) to interfere with your go/no-go decision. You (and your passengers) may be disappointed, but it's always better to be wishing you were in the air than wishing you were on the ground!

Another common tool for preflight risk assessment is the PAVE checklist, which covers:

- *Pilot:* The pilot's physical and mental readiness.
- *Aircraft:* The aircraft's condition and suitability for the flight.
- *EnVironment:* Weather, terrain, and other external conditions.
- *External Pressures:* External factors like time constraints or personal pressures that might influence decision-making.

Many FRATs incorporate questions that cover PAVE items, but it never hurts to use both. Employing risk management tools like these systematically will ensure you create a foundation of awareness and preparedness for every flight.

The Middle Layer

Let's get back to sandwich building as we're now ready for the meat of the matter, i.e., the flight itself. There's no time for baloney here. This is where we exercise our skills and training as pilots to perform at our best while maintaining a keen awareness of our environment. It's critical to monitor any changes to our flight and reassess any new hazards. Is there an unexpected change with the weather at your destination? Is a stronger-than-expected headwind cutting too closely into your fuel reserves? Do you notice your passenger becoming a bit air sick on their first flight in a small plane? All of these factors should be considered on an ongoing basis to ensure a smooth and safe outcome.

And just like sandwich fillings should complement each other and be well balanced for optimum flavor, so should our inflight tasks and workload. Use technology where it's appropriate, but don't let it consume too much of your attention from what's happening outside. Be sure to leverage the abilities of your passengers as well — they can help to lighten your workload greatly by spotting traffic, accessing charts, or performing other inflight tasks. Using all the resources at your disposal helps you focus on priority tasks and work more efficiently.

The Top Slice

Before we dig into our sandwich, we have the final layer of bread to consider. The importance of this last step can easily be underestimated. In addition to keeping everything together (toasting helps), the top layer also provides a place to add your favorite condiment to enhance the flavor of your culinary creation. We have a similar opportunity to add some structural integrity and enhancements to our flying during our postflight reflection. It's easy to think the flight is complete when the headsets come off and the wheels are chocked, but there are still some important steps that'll help you make the most of this and future flights.

A careful and honest reflection of your flight performance can help you spot areas where you excelled as well as areas in need of some improvement. Think about what types of challenges you faced and how you reacted. If you're able, try using a post-flight debriefing program, like CloudAhoy or ForeFlight, to record and play back your flight. This will help you get a more complete picture of your flying and where you might need some practice. For example, you might see that your airspeed was too high on some of your approaches or that your glideslope tracking was a bit erratic. These programs can also "gamify" the learning process by scoring your maneuvers and allowing you to share them with others.

Another important tool that allows general aviation (GA) pilots to analyze and share their flight data is the National General Aviation Flight Information Database (NGAFID). The FAA partnered with academia and industry to create the NGAFID, which allows pilots to analyze their own flight data from a wide variety of GA operations.

Pilots equipped with avionics capable of recording flight data can upload flight and engine data into NGAFID, e.g., data downloaded from a Garmin G1000.

Devices that record flight data, combined with the NGAFID, offer an easy and free way for pilots to improve their flying by visually analyzing flight performance for trends and changes over time. Depending on your method of recording and collecting data, you can even use the NGAFID to monitor for airworthiness and maintenance concerns. Yet another benefit is the ability to compare your data to that of other operators in your class or type of aircraft.

Note that all data collected from onboard avionics or a flight data recorder is anonymous and de-identified to other users and the FAA, so pilots can share their data without any fear of reporting or reprisal. Also note that the NGAFID is managed by GA community members and associations, not the FAA.

As part of the FAA's Aviation Safety Information Analysis and Sharing (ASIAS) system, NGAFID data also helps the FAA identify safety trends (both local and systemic) and drive support of targeted safety strategies.

Bottom line — your data is helping improve safety for the entire aviation community. As of April 2025, the NGAFID had amassed nearly 2.6 million hours of flight activity from more than 730 aircraft, with GA participation continuing to grow. If you want to learn more about participating with the NGAFID, go to ngafid.org. A recently added user manual on the website can help you navigate how to use the system.

The Perfect Safety Sandwich

While I've used an admittedly playful comparison here, hopefully the act of solid sandwich building does transfer into some helpful reminders on what it takes to plan and execute a safe flight: a solid foundation (preflight planning and risk mitigation), a quality filling (utilizing skills and maintaining awareness throughout the flight), and a finishing layer (reflection) to properly assess performance and strive for continuous improvement. These ingredients will ensure your success in the air — and in the kitchen!

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

YOU NEVER ROAM ALONE!

Putting Single Pilot Resource Management to Work

By Susan K. Parson

Editor's note: This article first appeared in the Nov/Dec 2019 issue of FAA Safety Briefing.

Aviation never fails to deliver a powerful "not so fast" lesson any time we think we've got something nailed.

Like many GA pilots, I got accustomed to being the sole pilot on board. Most of my flying involved being alone in the airplane or serving as pilot and flight attendant to my non-flying passengers. I figured I was pretty adept at "single-pilot resource management" (SRM).

My moment of reckoning with the true challenges of single-pilot operations came just after Thanksgiving one year. I had flown to coastal North Carolina to spend some quality time with family and, since the weather forecast for the return trip looked grim, I moved my departure time up by several hours.

What could possibly go wrong?

First, I was in instrument meteorological conditions (IMC) shortly after takeoff, but I figured I'd soon be on top. In fact, I was in the soup for the entire flight.

The ETA conditions at my destination were forecast to be marginal VFR. But Mother Nature doesn't read forecasts. There were many clues that this system was not behaving as expected, but I still didn't expect to hear a pilot ahead report missing the approach to my airport. Things got very busy, starting with the controller's request for me to "say intentions." There was no copilot or autopilot to help with basic flying tasks while I sorted through charts and options. There was no GPS, except for the tiny first-generation handheld I had recently acquired. I had never flown any of the approaches to Dulles, which was my only viable option. I had never flown a holding pattern "for real," but I had just copied instructions for holding in no-kidding IMC. The workload was intense, and I knew it would take a lot of focus and concentration.

When I was eventually cleared for the approach, I flew with every bit of concentration and precision I could muster. I broke out of the clouds around 300 feet above ground level and experienced the incredible "there-it-is!" relief when I saw the brightly lit runway.

In the most basic terms, I passed the SRM test: I flew single-pilot, single-engine IFR in IMC and landed without bending metal or rules. In the broader sense, though, there was plenty of room for improvement.

SRM Defined

The FAA *Risk Management Handbook* (FAA-H-8083-2) calls SRM the art of managing all the resources, both those onboard and those from outside sources, to ensure a successful flight. It is about how to gather information, analyze it, and make decisions. The pilot must be able to

competently perform a number of mental tasks in addition to the physical task of basic aircraft control. These include:

- Situational awareness
- Task management
- Automation management
- Risk management
- The aeronautical decision-making (ADM) process
- CFIT (controlled-flight-into-terrain) awareness

The *Pilot's Handbook of Aeronautical Knowledge* also offers an observation that became very real to me:

Learning how to identify problems, analyze the information, and make informed and timely decisions is not as straightforward as the training involved in learning specific maneuvers. Learning how to judge a situation and "how to think" in the endless variety of situations encountered while flying out in the "real world" is more difficult. There is no one right answer in ADM; rather each pilot is expected to analyze each situation in light of experience level, personal minimums, and current physical and mental readiness level, and make his or her own decision.

That is no small challenge, especially for GA pilots whose aeronautical experience may be limited. In my flight, which involved an airplane with no automation, solid training provided a firm foundation for task management and situational awareness. But I would have been much safer with a structured approach for gathering and analyzing information for both preflight and en route decision making.

SRM in Action

One of the most important things I lacked at the time was a set of personal minimums that, given the soupy conditions at my departure airport, would have kept me on the ground that day.

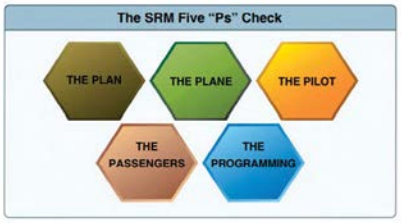
But let's say that you launch, like I did. The most valuable resources I had that day were external. I had been monitoring weather via an Automated Weather Observing System (AWOS), but the pilot ahead of me on the approach provided real-time information that made my divert-to-Dulles decision pretty easy. While I didn't need any special assistance from air traffic control (ATC), it was comforting to know that all the resources they offer were just one transmission away.

If you have passengers with you, they can assist by reading checklist items, watching for traffic, and listening to ATC radio calls. You might also teach regular passengers to assist with switching radio frequencies and basic programming for moving map and multifunction displays. Internal resources also include checklists and verbal briefings.

Onboard equipment constitutes another important resource. Today's technology offers an incredible range of information to assist with overall situational awareness, navigation, weather information, and much more. The key is to know what information is available and how to access it without diverting your attention from essential aircraft control duties.

To apply the tenets of SRM in a structured way, the *Pilot's Handbook of Aeronautical Knowledge* suggests regular evaluation of:

- Plan
- Plane
- Pilot
- Passengers
- Programming



The point of the 5P approach is not to memorize yet another aviation acronym. Instead, you might simply write these words on your kneeboard or add a 5P reference to your checklist for key decision points during the flight. Items to consider include:

Plan: Basic elements of cross-country planning: weather, route, fuel, current publications, etc. Since any of these factors can change at any time, review and update the plan at regular intervals.

Plane: Be proficient with all installed equipment and familiar with performance characteristics and limitations. Monitor systems and instruments in order to detect any abnormal indications at the earliest opportunity.

Pilot: The IMSAFE checklist is a handy tool for identifying hazards to your fitness for flight.

Passengers: Passengers can be a great help by performing tasks such as those listed above. Be mindful, though, that passenger needs — e.g., physiological discomfort, anxiety, or desire to reach the destination — can create potentially dangerous distractions.

Programming: Electronic displays, moving map navigators, and autopilots can reduce workload and increase situational awareness. However, be mindful that the task of programming or operating this equipment can create a dangerous distraction.

Whatever SRM approach you choose, use it consistently and remember that solid SRM skills can significantly enhance the safety of "crew of you" flights.

Susan K. Parson was a former editor of *FAA Safety Briefing*. She is a general aviation pilot and flight instructor.

LEARN MORE

FAA *Pilot's Handbook of Aeronautical Knowledge*, Chapter 2
bit.ly/AeronauticalKnowledge

FAA *Risk Management Handbook*
bit.ly/3Qbnmk0

FAA Safety Briefing, Sep/Oct 2019 (Checklist)
adobe.ly/2ZuWKnd

"Your Safety Reserve," *FAA Safety Briefing,* Mar/Apr 2015
bit.ly/FAASB-MarApr15

THE ROLE OF INDUSTRY CONSENSUS STANDARDS IN THE APPROVAL AND USE OF UNLEADED AVIATION FUEL (Part 3)

This is the third of a three-part series explaining how the next generation of unleaded aviation fuels may be authorized for use in specific engines and aircraft.

This update provides information on the critical role of industry consensus standards, such as those from ASTM International, to assist in the safe and consistent production, distribution, and use of aviation fuels.

For more information, visit flyEAGLE.org/updates.

Q: Why is a consensus-based specification for a new unleaded aviation fuel important to pilots and aircraft owners?

A consensus-based specification for a new unleaded aviation fuel undergoes a rigorous peer review of the required properties for the fuel and an assessment of which test procedures must be applied to determine if the fuel meets the requirements for its intended purpose. The specification is a governing document that is used to assess the quality of the fuel and provides assurances that it will perform in the aircraft as expected, regardless of where the fuel is purchased.

Industry consensus standards are developed by entities who bring together representatives and experts in a given field and provide the framework to develop proposed standards with appropriate supporting data, which is then reviewed, discussed, questioned, and ultimately agreed upon by reaching consensus. If consensus is not reached, the issues are adjudicated through an established process with all members of the group having the opportunity to weigh in on the outcome.

Additionally, the consensus standards development process facilitates the understanding and acceptance of a fuel across a broad range of aviation and petroleum stakeholders. During the development of the standard, and by reaching consensus, issues (beyond those of airworthiness considered by the FAA as part of an applicant's STC application) are surfaced and addressed by the fuel sponsors. Examples include questions about the fuel's fit for purpose, fuel handling and storage characteristics, and cosmetic impacts on aircraft that may not affect airworthiness, but are of interest to manufacturers, maintainers, and aircraft owners.

Q: Why are consensus standards important to aviation as a whole?

Consensus standards help provide consistency in fuel quality and compatibility with existing infrastructure, facilitating a smooth transition to lead-free aviation gasoline.

Several stakeholder organizations are directly involved in making the business and financial decisions to take on the responsibility and risks of deploying a brand-new fuel. This includes decisions to produce the new fuel by bringing together petroleum and some new chemical components per the fuel production specification; distributing the new fuel by transporting via road, rail, and barge infrastructure; storing the new fuel at various transportation connection locations and airports; dispensing the new fuel into customer GA aircraft ensuring safety and compliance for aircraft and personnel; and providing maintenance and manufacturer continued operational safety, technical, and warranty support. These are marketplace decisions that must be made by several different stakeholder businesses that are not related to FAA issuance of a TC, STC, authorization, or any other approval. Just as FAA must have the information necessary to determine compliance with 14 CFR part 23 airplane and part 33 engine airworthiness requirements to make its approval decision, producers, distributors, fixed base operators (FBOs), airports, and engine/aircraft manufacturers require an adequate understanding of a new fuel to make business decisions on the risks of deployment.

Without consensus standards, each company in the supply chain would need to individually review testing data and the specifications derived from that data. This approach is costly, time-consuming, and lacks the benefits of broad industry subject matter expert peer review, input, and oversight.

A successful transition to a new unleaded fuel requires broad acceptance across the aviation and petroleum industries and relies on rigorous testing, stakeholder collaboration, and the establishment of robust specifications.

Q: How do industry consensus standards assist in fuel safety and reliability throughout production and distribution?

Fuel production, distribution, storage, and handling parameters are set by multiple consensus standards developed through a thorough analysis by leading experts. These standards, along with industry-supported consensus specifications, provide confidence in the fuel's composition, properties, and quality throughout production, distribution, and delivery to the aircraft.

New fuels must be tested not only for engine compatibility but also for their interactions with materials used throughout the supply chain, including hoses, filters, gaskets, and other fuel system components. Materials compatibility evaluation serves as due diligence in helping to ensure that fuels do not degrade or contaminate equipment used in transportation and storage.

Consensus standards can help minimize risks for pilots, aircraft owners, airports, fuel distributors, and fixed-base operators (FBOs), and help to ensure that unleaded aviation fuels maintain their integrity from manufacture to aircraft. They also provide a framework for mitigating operational risks, so that new fuels can be used safely in both existing and newly developed fueling infrastructures.

Q: What is ASTM International, and what role does this organization play in the introduction of new unleaded aviation fuels?

ASTM International, an independent, non-government organization, is a globally recognized standards development body that establishes and manages technical specifications for a wide range of products, including aviation fuels. Founded in 1898, ASTM brings together experts from various industries to create and maintain standards that ensure product quality, safety, and performance. In aviation, ASTM plays a key role in developing

voluntary consensus standards for aviation fuels, including unleaded avgas, as well as motor gasoline, diesel fuel, jet fuel, and biofuels.

The ASTM standard development process is a collaborative effort that includes developers, refiners, manufacturers, aircraft and engine producers, distributors, equipment makers, providers, and users. The process provides opportunities for chemists and engineers to review the data that supports either modifications to an existing standard or the development of a newly proposed standard. The review process allows for challenges to be raised and discussions to be held, facilitating the development of a standard that is relevant and technically sound with regard to fuel production, performance characteristics, and compatibility with existing aircraft and the fuel distribution infrastructure. These rigorous assessments are there so that, if the final specification is met, they will promote safe production of the fuel.

For pilots and aircraft owners, an ASTM fuel production specification — "ASTM spec" — provides assurances that modifications to an existing spec or to a proposed unleaded fuel specification have been rigorously reviewed in the context that it can be consistently manufactured and supplied to the end user. ASTM specs also help maintain fuel consistency, reduce potential maintenance issues, and protect aircraft engines from incompatibility concerns.

Q: Where else is an ASTM specification found?

Just about every fuel available for purchase today — even outside aviation — has an ASTM specification, including:

- automobile gasoline and ethanol
- truck diesel and biodiesel
- home heating oil
- kerosene
- jet fuel
- 100LL Avgas
- UL94 Avgas
- UL91 Avgas

Further, many regulatory bodies incorporate ASTM standards by reference. Read the ASTM D910-21 Standard Specification for Leaded Aviation Gasolines at astm.org.

Q: Does using the consensus standard process take longer than developing a producer-developed standard?

The consensus process provides data and understanding about a fuel's composition, performance, other important properties, and specific test methods to measure those properties for peer review. Peer review includes subject matter experts in fuels development, chemistry, test methods, production, distribution, aviation manufacturers, and end users.

The peer review process is a vital step because it provides the opportunity for any stakeholder to review data, ask follow-up questions, and request additional data to allow for a better understanding of a brand-new fuel. It also provides the opportunity to express confidence and acceptance through a voting process to adopt a new fuel production specification.

A consensus standard can take longer to complete than a producer-developed standard. There are multiple reasons for this, including:

- The time it takes to develop a successful standard is determined largely by the sponsor's ability to supply appropriate data to support their proposed standard and how thorough and responsive they are to addressing questions and issues raised through the balloting process.
- Consensus requires an open and transparent discussion of the data that supports the proposed change to an existing standard or a newly proposed standard.
- There is an adjudication process that allows an individual to raise a concern for consideration by the entire body of volunteers. If the concern is deemed relevant, it must be addressed to the satisfaction of the consensus body.

JAMES WILLIAMS

THE SCALE PROBLEM — HOW SMS CAN WORK FOR GA

"That doesn't apply to me." This is a favorite retort when trying to avoid seemingly unnecessary work. We've all said it. I know I have — many times. My initial response to safety management system (SMS) was the same impulse. But over time, as I've learned more, I've come to appreciate the connection between general aviation and SMS. I always saw SMS as something fit for large operators like airlines or charter companies. When reading the earlier academic guidance on SMS, it seemed like the scale was a nonstarter for your average general aviation (GA) pilot. When you're the line pilot, chief pilot, director of training, director of safety, and CEO all in one, it can make you feel like you are too small for such a system. But the scalability of SMS solves this problem. SMS has four key components: safety policy, safety risk management, safety assurance, and safety promotion. I can feel many of your rolling eyes across time and space, but I assure you, SMS can work for you.

Downsizing

The four components of SMS are designed to be more of a concept than a detailed process. The idea isn't for the average GA pilot to have the same process as an airline; it is to maximize the resources that you do have by providing a framework. That framework can be updated and revised to meet current challenges and learn from previous experiences. Let's look at each component and how it could be implemented in our more austere environment.

Safety policy can be as simple as a statement of intent, some basic processes, and a set of personal minimums. Just writing down what you normally do would be a good baseline to start from. You'd be surprised how much the process of writing things out reinforces their effectiveness. But with these simple documents in hand, we can move to the next component. Safety risk management puts the safety policy into action. You compare the current (and forecast) conditions against your personal minimums and preferably record that for the next component. You use your processes in conjunction with established checklists to provide consistent performance. Safety assurance is about making sure the other components are working within your SMS. Did your last flight have any issues? Were there any issues with the policy or the application of the policy? This feedback is a critical component of SMS. SMS is a living process. It adapts to changing conditions and circumstances. This is where the final component, safety promotion, comes in.

While the first three components form a closed cycle, safety promotion functions in and around all the steps. Your safety analysis will likely create some insights that might be applicable to more pilots out there, and those pilots will likely have other insights you could benefit from. Sharing insights and outcomes from your SMS with other pilots and hearing from them allows you to crowdsource your safety. And this is an excellent example of safety promotion.

Making it Practical

Free online tools like Google's Workspace applications can help you automate the process of creating and collecting data. These online tools can also make it easier to share your systems and processes. This allows for rapid iteration between you and other users to find flaws or improvements. It also gives you a larger data pool to find issues faster. This can be especially useful in environments like type clubs or flying clubs, where similar equipment allows for good comparisons. For a great example of this, check out the article "New Year, New (Safer) Operations" from our Jan/Feb 2024 issue.

As they say, Rome wasn't built in a day, and your SMS won't be either. But you can lay the foundations in an hour or two. Don't worry about it being perfect. Perfection is an awesome goal, but our more immediate objective is to keep improving every flight. Your personal SMS is a great framework for that. Improve your flight, improve your SMS, improve your flight, and so on. Soon it will be second nature, and you'll wonder why you thought it was such a big hassle.

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

LEARN MORE

FAA's SMS webpage
faa.gov/about/initiatives/sms

"New Year, New (Safer) Operations,"
FAA Safety Briefing, Jan/Feb 2024
bit.ly/4jGejq6

AC-120-92D, *Safety Management Systems for Aviation Service Providers*
bit.ly/AC120-92D

REBEKAH WATERS

DO YOU HAVE A PREFLIGHT CHECKLIST FOR YOUR DRONE?

As this column has established many times, if you fly a drone, you are a pilot. And a pilot's number one job is safe operations in the National Airspace System (NAS). But did you know that safety begins before your drone even leaves the ground? Traditional pilots are required to complete a preflight check every time they fly. Remote pilots are encouraged to do the same. Let's take a look at what a preflight checklist is, why you should use one, and how you can develop your own.

A preflight checklist is a list of tasks to complete before a flight to ensure the aircraft and pilot are safe and ready for takeoff. Paying close attention to a preflight checklist slows you down and helps you focus so you don't miss important steps. This important tool helps reduce human error and combat complacency. Developing and consistently using a good preflight checklist helps prevent accidents and is an important part of successful drone operations.

> A COMPREHENSIVE PREFLIGHT CHECKLIST IS A HANDY ADDITION TO YOUR SAFETY TOOLBOX.

While it doesn't require the use of a checklist, 14 CFR section 107.49 does require drone operators to conduct a preflight inspection. This inspection includes tasks like assessing the operating environment, including local weather, airspace restrictions, and ground hazards, as well as ensuring that control links are functioning properly, power is sufficient, and payloads are secure. Manufacturers may also provide preflight inspection procedures. Even if you don't operate under part 107, a preflight inspection is a necessary step to ensure a safe flight and make sure you don't miss any important steps.

Drone pilots in Alaska preflight their drone before an operation.

Chapter 7, section 3, of Advisory Circular 107-2 provides more guidance for developing and using a preflight checklist and lists 23 items that should be included in a preflight inspection. For the purposes of this article, I've broken it down into three categories: structural integrity, system functionality, and environmental considerations. The structural integrity portion of a preflight checklist should focus on the physical condition of your drone to ensure structural soundness and mechanical functionality. This includes looking for wear or damage on the airframe and undercarriage, checking the propulsion system and propellers, and making sure registration markings are displayed and legible. The system functionality portion ensures that your drone's electronic systems are functioning correctly. This includes verifying you have adequate power, a functional display panel, and control link functionality. The third portion of a good checklist, environmental considerations, addresses external factors like weather, obstructions, and airspace. This also includes checking for people below or aircraft in your planned operating area. For a detailed look at this list, you can review the AC at bit.ly/SmallUAS.

A comprehensive preflight checklist is a handy addition to your safety toolbox. For more ideas on what to include in yours, look for any recommended preflight checks in the manufacturer's operating manual that came with your drone. Developing your checklist is only step one. Step two is using it every time you fly. No matter the size of the aircraft or the type of operation you are conducting, a preflight checklist helps you fly safer.

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

REBEKAH WATERS

COMBATING MAINTENANCE NORMS

"Never mind the maintenance manual. My way is quicker." How many times have you thought this? It might have been what the maintainers were thinking when they used a forklift to support the engine and pylon on a DC-10, rather than successively accessing and detaching them, as they were performing maintenance. During the procedure, the forklift's hydraulics leaked and had to be adjusted from time to time. These conditions caused a drift down of one inch per 30 minutes and resulted in a cracked flange in the engine pylon assembly that was not discovered before the next flight. The damage resulted in a crash on May 25, 1979, that killed 271 people aboard the aircraft and two on the ground. This tragedy is a harsh reminder of the dangers of norms.

In the context of "The Dirty Dozen," norms are a group's way of doing a job "better" than the published procedure. It could be considered tribal knowledge, unwritten rules enforced by the group, peer pressure, or habit. These unwritten rules of behavior considered acceptable by the group are meant to gain an advantage or efficiency. People tend to develop norms to solve problems that seem to have ambiguous solutions. Expectations also contribute to norms. This could be expectations that pressure the maintainer to cut corners and work quicker. But norms can also develop when positive expectations aren't effectively established or communicated.

Norms can be positive or negative. Positive norms that safely improve a process or procedure should be analyzed and, if no adverse consequences or regulatory issues are identified, added to an official process or procedure. Negative norms, as the name suggests, have a negative impact on an organization. They tend to be ineffective in the long run and lead to dangerous errors and risk. Examples of negative norms include things like working without using a maintenance manual, signing for work not done to get the aircraft out in time, or having a "that's how things are done around here" attitude. Negative norms must be actively stamped out.

Combating norms is everyone's responsibility. This starts with building a safety-first culture. Step one is to identify your norms. This is harder than it sounds. Norms are so comfortable — so ingrained in the culture — that you might not even know they exist. Next, assess your norms. This must be an honest assessment. If there is a problem, admit it. Reporting systems are an important part of this. Make a commitment. Adhere to a just culture that promotes reporting. Always follow the instructions. If the instructions are clunky and a workaround works better, report it. It can be hard to change procedures, but in the long run, it's worth it!

POSITIVE NORMS THAT SAFELY IMPROVE A PROCESS OR PROCEDURE SHOULD BE ANALYZED AND, IF NO ADVERSE CONSEQUENCES OR REGULATORY ISSUES ARE IDENTIFIED, ADDED TO AN OFFICIAL PROCESS OR PROCEDURE.

Just because something has become a norm doesn't make it right. It's important to assess and correct norms often. Walk the talk. Be a positive influence in the fight against norms. It can take courage to stand up to the group and point out that their norm violates the rule or published procedure. But your courage could save lives.

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

LEARN MORE

"See a Safety Issue? File a NASA Report," *FAA Safety Briefing*, May/Jun 2023
bit.ly/49NJN8N

VERTICAL SAFETY DRIFT

Historically, helicopter operations have developed a reputation for being high-risk with limited safety intervention. While these operations are complex by nature and typically offer limited margins for error, the United States Helicopter Safety Team (USHST) has identified safety enhancements that, when implemented, can avoid hazardous outcomes.

In the air tour industry, safety is paramount, but there are often challenges caused by high workload, time pressures, and public expectations. Implementing a safety management system (SMS) in these operations offers significant benefits. An effective SMS goes beyond compliance; it creates a proactive safety culture where hazards are continuously identified, analyzed, and mitigated.

For air tour operators, instituting an SMS helps standardize risk assessment procedures, reinforces accountability, and ensures that safety is not left to individual discretion alone. It encourages front-line pilots to report concerns without fear of reprisal and gives management the tools to track and respond to emerging trends before they lead to incidents. For example, routine use of preflight risk assessment forms can flag when operational pressures are influencing go/no-go decisions, or when pilots are routinely accepting marginal weather.

Even in well-intentioned operations, a phenomenon called safety drift can gradually erode safe practices. Safety drift occurs when unsafe behaviors, like stretching minimums or skipping steps, are repeated without immediate consequences and eventually become routine. Over time, this normalization of deviance puts crews at serious risk.

To combat safety drift, helicopter operators should emphasize scenario-based training. Unlike traditional training that focuses on rote procedures, scenario-based training immerses pilots in realistic scenarios, encouraging active decision-making and judgment. Simulation is a key part of this effort. Simulators allow pilots to experience mistakes safely, learn from them, and rehearse better responses. Pilots can be put in realistic operational situations that provide pilots opportunities to practice skills or scenarios otherwise too risky to perform in the helicopter. Performing emergency procedures in a simulator, such as low altitude auto-rotations, night vision goggle operations in low illumination, and unintended flight into instrument meteorological conditions, gives the pilot and instructor a safe environment to learn and respond.

Scenario-based learning helps pilots build cognitive tools to make sound decisions in high-stress environments.

One of the most critical aspects of flight operations is the go/no-go decision, where internal ambition, external pressure, or mission urgency can cause even experienced pilots to stretch safety limits. When safety drift creeps in, these decisions become increasingly risky and harder to recognize as flawed. Through repetitive training on how to assess weather, aircraft performance, and operational limitations, pilots build the confidence to say "no" when needed, even if it's inconvenient or unpopular. A conservative mindset does not mean flying less; it means flying smarter, and with a greater margin of safety.

When combined with the structured support of an SMS, these lessons become institutionalized rather than optional. The result is a healthier safety culture where every go/no-go call is treated with the care and gravity it deserves.

Leah Murphy is a dual-rated flight instructor and helicopter air ambulance pilot. She is also an FAA Safety Team Representative in Cleveland, Ohio.

LEARN MORE

Overview of SMS
bit.ly/faasms

AC 120-92D, *Safety Management Systems for Aviation Service Providers*
bit.ly/AC120-92D

Master Your Mission in a Sim First Video (The Rotorcraft Collective)
bit.ly/44UNn1a

Just Say No! Video (The Rotorcraft Collective)
bit.ly/437KKH1

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 nearly 17,000 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.

Lose the Laser

The FAA recently shared a story on LinkedIn from a pilot who was the target of a laser strike (LinkedIn.com/company/faa). Pilots were supportive and quick to share their own experiences with lasers.

It was not a funny experience. I was lasered for only a blink of time, and it totally blinds you if it enters the windshield at a precise and undesirable angle.
— Jose

I was lasered in the eye when I was a crew member on a military training flight. It was not fun getting medical checkups and optometry tests for three days.
— Josh

Having endured several laser events, I can tell you that they aren't fun. One was quite upsetting, and fortunately, we had just enough warning to duck behind the cockpit structure. In another case, the offender wasn't good at aiming.
— William

Learn about the penalties a perpetrator can face and how to report a strike at bit.ly/4c4Vhqt.

Treasured Takeoffs

The article "National Treasures" in the Mar/Apr issue (bit.ly/4bEUwnV) highlighted some of the U.S.'s hidden gem general aviation airports. Some readers expressed their appreciation for the spotlight on the locations, shared some of their own experiences, and added their own "treasures."

Great subject and a nice thought, but unfortunately, a glaring omission. Scores of GA airports across Alaska are the true backbone of aviation there, and the pipeline to see vistas all of the others put together can't match.
— Howard

Great article. I am not sure if you are aware of the pavement condition at Furnace Creek Airport. It has deteriorated to the point that it may be best used by backcountry aircraft. The National Park Service would do well to invest some money and repave this airport and the other paved airport in Death Valley, Stovepipe Wells. I would think that it would allow more visitors to travel to the park and enjoy the lodging near both airports. I am glad I had the opportunity to fly to both of these airports a few years ago. I would not consider it now because of safety and potential aircraft damage concerns.
— Ted

Time to get busy and visit this good selection of airports! I've been to Sedona, BQ1 of barbeque fame, Cedar Key, and Big Creek. All were memorable.
— Rankin

Love this spotlight on the unsung heroes of aviation!
— Bluefin Aviation Services

Tire-iffic Tips

Great article [bit.ly/3Y286vS]! Aircraft tires endure extreme stress during landing and takeoff, making proper maintenance essential for safety. Regular inspections, correct inflation, and proper storage not only extend tire life but also prevent critical failures. A small oversight in tire maintenance can lead to significant risks. Thanks for sharing this important reminder!
— Hafiz

Hi Hafiz, thank you for reading and reaching out! Your comments inflated our mood, and we're pumped that you found the information valuable .

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) at @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 District Office or air traffic facility.

SITUATIONAL SAVVY

As part of the FAA's recent focus on enhancing general aviation safety, we are reminding pilots to make use of all available tools and resources during pre-flight, in-flight, and post-flight activities. A dedicated webpage at faa.gov/GA-action conveniently lists many of these resources, along with highlighting some recent actions the FAA is taking to improve safety, like the agency's support of AOPA's National Pause for Safety campaign at gasafe.org. It's a thorough list, and I recommend pilots do have a look.

But when it comes to enhancing situational awareness, there's one resource that truly stands out — the "From the Flight Deck" (FTFD) video series. Now in its fifth year of production, this popular series provides a front-seat point of view at airports nationwide to help reduce mishaps. Using aircraft-mounted cameras, the videos provide actual runway approach and airport taxiway footage. The videos also incorporate diagrams and graphics to identify hot spots and point out other hazards like potentially confusing intersections, the location of hold short lines, or unique attributes of the runway safety area that pilots need to watch out for at airports.

It's a game-changer in terms of boosting awareness and something I absolutely wish I had during my flight training. Having first-person familiarity with a foreign airport is not only safety-enhancing but also reduces the anxiety of navigating new territory. I find it helpful even with airports I am familiar with, like the Manassas Regional Airport (HEF) video (bit.ly/FTFD_HEF), which highlights changes to more clearly mark the location of Taxiway Bravo 4.

You don't have to take my word for the value these videos offer. Here's a testimonial from a frequent user:

> *"Pilots are visual learners, and this reaches the core of how they learn," said Cary Grant, an FAA Safety Team representative and aeronautical science professor at Embry-Riddle Aeronautical University's Prescott Campus in Arizona. "I'm a big user of the From the Flight Deck videos for myself and for my students in lessons. To teach them without the picture, it doesn't really become a learning experience like this."*

There's also a series of subject-specific videos that target areas like proper phraseology, complex airfield geometry, wrong surface/wrong airport landings, and air traffic control instructions to hold short or line up and wait. Another testimonial here highlights the value of a weather-specific FTFD video:

> "The Winter Weather Challenges *video (bit.ly/FTFD_Winter) is a great one to show my students up here," said Mary Build, chief flight instructor at Eastern Slope Aviation Academy in Fryeburg, Maine. "As an instructor and pilot, these videos are wonderful assets."*

The series now has more than 140 videos (from Albuquerque to Zamperini Field) and boasts an impressive one million-plus total views! But wait, there's more. The FTFD page also contains other safety resources that can be useful preflight planning tools, like pilot handbooks for individual airports and Arrival Alert Notices. The handbooks include information and tips from the air traffic professionals who know their airport layout thoroughly. They also include photos and graphics to call out specific safety challenges. The Arrival Alert Notices use photos to give a firsthand view of the approach to an airport while flagging potential wrong surface issues. A data visualization on the FTFD webpage at faa.gov/flight_deck consolidates and makes it easy for pilots to find these airport-specific safety products.

Check out the full list of From the Flight Deck videos at faa.gov/flight_deck.

So, before your next flight, be sure to let "From the Flight Deck" be your preflight partner. It's a great way to help you steer clear of any airport surface issues and keep your flight safely on track.

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

PAUL CIANCIOLO

RUNE DUKE

Aeronautical Information Specialist, FAA's Flight Procedures and Airspace Group

When Rune Duke was young, he often asked his parents to take him to nearby Detroit Metro Airport (DTW) to watch the airplanes. Those trips cultivated his interest in aviation, and he began flight lessons in high school.

"I started flying when I was 16 — just a few hours, but enough to get hooked and run out of the little money I had saved," he notes. "I picked it back up when I was 22 with the help of the GI Bill, and I haven't stopped since."

Rune enlisted in the Army as an air traffic control (ATC) specialist, where he talked to pilots in South Korea and Alabama. Although he didn't make the military a career, Rune knew aviation was his passion. After the Army, he earned a master's from Embry-Riddle Aeronautical University. He then worked as an airport manager at Rantoul National Aviation Center-Frank Elliot Field (TIP) in Illinois, before joining AOPA as a director of government affairs for airspace and air traffic issues.

"When I joined the AOPA government affairs team in 2015, I was initially surprised and heartened at the FAA's level of collaboration and engagement with industry. I had opportunities to work closely with different FAA offices on various initiatives," Rune explains. "These engagements showed me that the FAA was full of passionate aviation professionals who inspired me to want to join."

In 2020, Rune returned to public service as an ATC specialist in the FAA's Air Traffic Safety and Technical Training office. He assessed changes to the National Airspace System (NAS) to ensure safety impacts were identified and mitigated before implementation. A year later, he served as an aeronautical information specialist and a senior technical advisor in the FAA's Flight Standards Service.

Now, Rune works for the Flight Procedures and Airspace Group, where he is responsible for policy related to instrument flight procedure criteria and chart procedures.

"It's a great team with diverse backgrounds, including controllers, pilots, and procedure designers, each bringing extensive expertise to the challenges we are working on," he elaborates. "Many of our projects enable the safe and efficient facilitation of advanced navigation capabilities in the NAS. We are constantly improving our policy based on lessons learned. I am proud to be part of a team passionate about safety and delivering new procedures that promote safety and efficiency for the flying public."

The group ensures safe and efficient flight paths from takeoff to landing by establishing departure, en route, arrival, and approach design as well as obstacle clearance standards, criteria, and policy for the NAS. They also provide operational safety reviews and support through obstruction evaluations, airport aeronautical studies, airport airspace analyses, NAS change proposals, and airport planning. Working with industry is key to a safer NAS, so the biannual virtual public meeting about aeronautical charting (see bit.ly/FAAACM) is vital to the team.

As an avid pilot who stays engaged and proficient by striving for a new rating every two years, Rune has a few tips for his fellow pilots on avoiding becoming a statistic of safety drift.

1. Leverage technology in the cockpit. Practice with those tools before flight and know when to focus out the window.

2. Be part of the community. Watch videos, stay engaged, and learn about changes and new opportunities.

3. Hit the books regularly. Especially be on the lookout for regular changes to the *Aeronautical Information Manual* (AIM).

4. Practice good aeronautical decision making (ADM) and use a personalized flight risk assessment tool (FRAT).

"I continue to be inspired by my colleagues' dedication to the flying public and passion for safety," Rune shares. "And I am proud to collaborate with our NAS users who provide invaluable feedback to help us refine and improve our work, moving the NAS forward safely."

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