

January/February 2021

FAA **BRIEFING** Safety

CHALLENGE AND RESPONSE



Federal Aviation
Administration

7 I've Got
the Flight
Controls ...
Or Do You?

10 On
Recovering
From
Rustiness

14 Making it Look Easy
The Magic of SOPs



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of Transportation

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ABOUT THIS ISSUE...



The January/February 2021 issue of *FAA Safety Briefing* takes a unique look at the "challenge and response" environment that is prevalent within the aviation community. Feature articles and departments provide a variety of tools and resources that can help you rise to the challenge, whether it's shaking off rust from inactivity, pursuing new aeronautical goals, or leveraging technology to stay at the top of your game. We also look at the important role of SOPs in our operations and the many benefits flying clubs offer to aviators.

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FAA **BRIEFING** Safety

The FAA Safety Policy Voice of Non-commercial General Aviation



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NEW YEAR, NEW BEGINNING

Happy New Year! I suspect that many of us — maybe all of us — were quite happy to bid farewell to 2020. To say the least, it was a challenging year, one that served up a seemingly endless parade of unfortunate events. Among those, the COVID-19 public health emergency and the string of diverse natural disasters upended almost every aspect of normal life. COVID-19, which continues as I write, has had a particularly egregious impact on the industry we all love so dearly. Regulators like the FAA and aviators like you have all had to find innovative ways to respond to the many unprecedented challenges we have encountered over the past year.

A Clean Slate?

The magazine team had long planned “challenge and response” as the thematic center of gravity for this issue of *FAA Safety Briefing*, but the events of 2020 and their impact make

it especially appropriate. However much we might want to imagine that the advent of a new year on the calendar wipes the slate clean, we must continue to respond to the numerous challenges that persist from 2020. In addition to meeting the challenges of maintaining physical and mental health, many in the aviation community have found drastically reduced opportunities to maintain not just regulatory currency, but also appropriate levels of skill and proficiency.

As you probably know from following the progression of Special Federal Aviation Regulation (SFAR) 118, the FAA has responded to some of the regulatory challenges by offering a modicum of regulatory relief from certain requirements. It is on you to step up to the challenges of regaining and retaining proficiency in critical knowledge and skills, but we can help. The magazine team is devoting this issue to providing ideas and resources

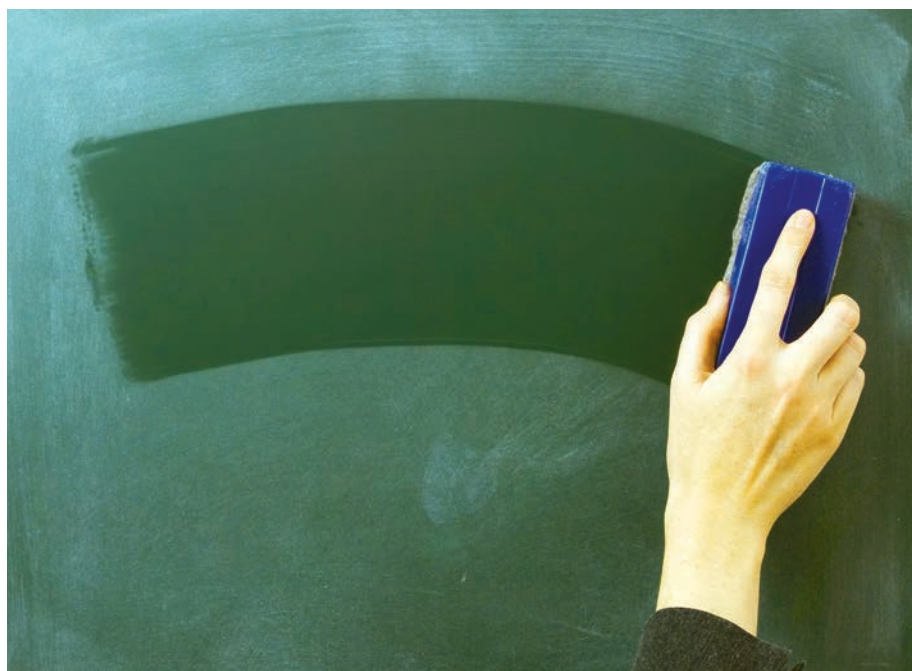
that can help you get back into the game. Even if circumstances continue to limit actual flying for a few more months, you can use these resources over the winter to firm up your aeronautical knowledge and make a plan for scraping the barnacles off your physical flying skills.

Happy Anniversary!

Another rationale for the “challenge and response” theme arises from celebrating the 60th anniversary of this publication. It started back in 1961 as FAA Aviation News, a name we updated to the current title beginning with the March/April 2010 issue. That change was primarily about responding to the challenge of matching the publication’s name to its continuing mission — to be the “FAA Safety Policy Voice of Non-commercial General Aviation.”

If you’re looking for an interesting and even awe-inspiring way to spend some of your winter hibernation time, try making a list of how aviation has changed in the six decades of our existence as an aviation publication. Just the last couple of decades have produced game-changing technologies for airframes, avionics, and powerplants for manned aircraft. The fast-growing UAS sector of our vibrant aviation community presents a whole new set of opportunities and, as you probably recognize, those opportunities come with new challenges to maintaining the highest levels of aviation safety.

I don’t know what 2021 will specifically bring in terms of challenges, but I do know that the aviation community will respond with enthusiasm. That’s who we are.



AVIATION NEWS ROUNDUP

Aircraft Disinfection Procedures

As a result of the COVID-19 public health emergency, aircraft owners and operators may find it necessary to increase the frequency with which they disinfect aircraft interiors and to include additional areas of the aircraft not previously disinfected. Disinfectants used should be compatible with the aircraft and approved by the aircraft manufacturer for use on the aircraft.

A new Special Airworthiness Information Bulletin (SAIB) focuses on the potential near term and long term implications for airworthiness. Although disinfection is not directly related to airworthiness, too frequent or improper application could result in negative impacts, to include corrosion, embrittlement, increased flammability, and electrical short circuit. Depending on the system or part affected, any of these conditions could create an immediate or latent airworthiness issue. The FAA recommends that all owners and operators, as well as any other person responsible for the airworthiness of affected aircraft, implement the aircraft manufacturer's disinfection guidelines and be aware of the potential negative impacts of disinfectants.

Read the SAIB at [bit.ly/NM-20-17](https://www.faa.gov/aircraft/saib).

More DEF Contamination Incidents

Another incident involving the probable contamination of aviation jet fuel with diesel exhaust fluid (DEF) occurred last fall. The urea-based, emissions-reducing solution could be present in Jet-A fuel, which can lead to potential engine failure.

On October 20, 2020, an Embraer Phenom 300 returned to Savannah/Hilton Head International Airport (SAV) shortly after departure in response to crew alerting system

warnings of "ENG 1 and ENG 2 Fuel IMP BYP." The aircraft landed safely, and subsequent testing indicated the presence of urea in a fuel sample.

Download the Safety Alert for Operators (SAFO) at [bit.ly/SAFO18015](https://www.faa.gov/aircraft/safo).

Nall Report Now Near Real-Time

The Aircraft Owners and Pilots Association (AOPA) Air Safety Institute released its 29th and 30th Joseph T. Nall Reports, which offer several



SAFETY ENHANCEMENT TOPICS

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



JANUARY

Aeronautical Decision Making

Explore the many safety benefits of ADM.



FEBRUARY

Expanding Your Horizons

Learn how acquiring experience in a wide range of environments can improve overall pilot performance.



enhancements. The data have near real-time analysis of general aviation accidents updated on a rolling 30-day cycle and access to analysis going back as far as 2008. This includes data trends well into 2020.

The executive summaries for a given period provide insight and comparisons of selected dates versus previous years. For the years 2017 and 2018, the executive summaries note a decrease in overall accident rates. Review the summaries for a detailed analysis of trends and rates for non-commercial and commercial fixed-wing operations, non-commercial and commercial helicopter operations, and sport/experimental operations.

View the new report format at bit.ly/AOPANallReport. Note that the NTSB takes approximately two years to issue its final findings for accidents, so as we move into 2021, you will start seeing initial 2019 data rates.

Make Sure Your Cargo is Safe

If you are shipping supplies, personal protective equipment (PPE), or laptops, make sure to check whether your shipment includes dangerous goods (hazardous materials).

Some common items, such as cleaning supplies, hand sanitizer, or mobile devices and laptops containing lithium batteries can pose a danger in transportation when not properly handled, packaged, or labeled. For example, most hand sanitizers, including wipes, contain

alcohol and are flammable in nature. Whether you are traveling by aircraft or shipping products, the FAA has resources to help you learn how to keep products safe. Visit the PackSafe page at faa.gov/Hazmat/PackSafe to learn about updated limits for passengers traveling with hand sanitizer and other information about what you can bring along as a passenger. Visit the SafeCargo page at faa.gov/Hazmat/SafeCargo for interactive shipping guides on flammable liquids (such as hand sanitizer), aerosols, and battery powered equipment. These are good resources to check if you plan to carry any of these items in your own aircraft as well.

The risk starts well before the airport. If you have questions about what is safe to fly with, email hazmatinfo@faa.gov.

Archives Updated

Looking for an older issue of this magazine? Visit our archive page at bit.ly/FAASB-Arc, which offers issues back to 2008.

The archive page has recently been updated. Each year has a tab at the top. Each tab shows the six issues for that year on the same page. You can more easily scan the titles, headlines, and cover images to search for an issue or topic.

For issues spanning 2001 to 2008, visit the Library of Congress'

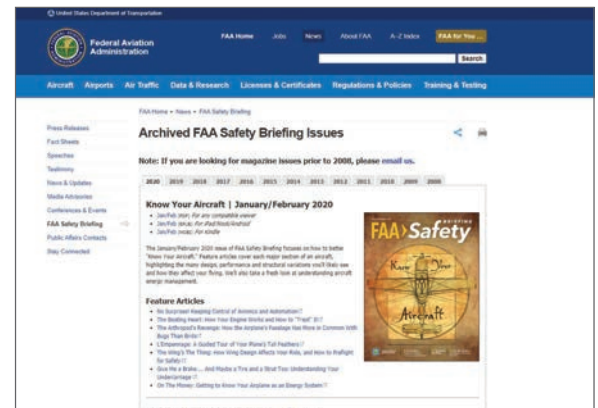
website at permanent.fdlp.gov/lps1644/index.htm.

NTSB Database Search Function Improved

The NTSB launched a new public-facing database query system called Case Analysis and Reporting Online (CAROL), which improves users' ability to search for data related to NTSB investigations and safety recommendations. Additionally, it makes accessing information within our dockets easier.

With CAROL, you can use three query options (keyword, basic, query builder), access pre-populated data sets such as safety recommendations associated with the NTSB's Most Wanted List, and search data for all modes (rail, pipeline, hazardous materials, marine, highway, and aviation).

Go to NTSB.gov and click Aviation Database under the Investigations menu to search.



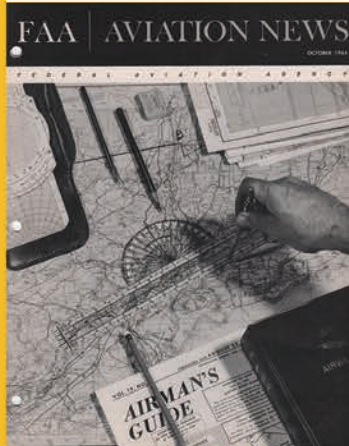
New ADs for Cessnas

Last November, the FAA adopted a new Airworthiness Directive (AD) for Textron Aviation (Cessna) 180/182/185 airplanes. It was prompted by a report of cracks found in the tailcone and horizontal stabilizer. This AD requires inspecting the tailcone and horizontal stabilizer for corrosion and cracks and repairing or replacing damaged parts as necessary. It went into effect on December 7, 2020. Download the AD at bit.ly/AD-2020-21-22.

The FAA also adopted AD 2020-18-01, which pertains to certain Cessna Model 172, 182, 206, 207, and 210 airplanes. The AD, which was prompted by cracks found in the lower area of the forward cabin doorpost bulkhead, requires repetitively inspecting the lower area of the forward cabin doorposts at the strut attach fitting for cracks and repairing any cracks. This AD went into effect on November 12, 2020, and affects 14,653 airplanes of U.S. registry. Download this AD at: bit.ly/AD-2020-18-01.



Celebrating 60 Years of Aviation Safety Outreach



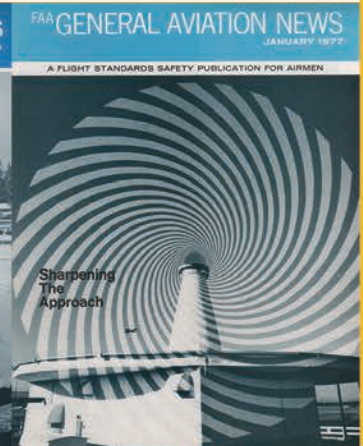
c. 1961



c. 1967



c. 1976



c. 1977



c. 1978



c. 1981



c. 1992



c. 1996



c. 2004



c. 2008



c. 2010



c. 2019

We may have changed our name and design a few times over the last 60 years, but our purpose has remained steadfast: to be the safety policy voice of non-commercial general aviation.



ADDRESSING A SUBSTANTIAL PROBLEM



Substance use disorders (SUDs) in the United States are a significant problem that can contribute to premature illness and death. SUDs can be devastating to one's career, family, and others. An astonishing estimate notes that SUDs affect more than 8-percent of the population over 12 years old. Substances implicated in dependency and abuse include alcohol, prescription drugs such as opioids, stimulants, sedatives, etc., as well as illegal drugs. SUDs also pose a public safety concern due to the increased risk of an accident, including aviation mishaps.

Consequently, substance abuse and dependence are specifically disqualifying conditions for FAA airman medical certification, as listed in Title 14 Code of Federal Regulations (14 CFR) part 67. Even if an individual does not require an FAA airman medical certificate, the provisions of 14 CFR section 61.53 (prohibition on operations during medical deficiency) still apply to all pilots, as do the reporting requirements of 14 CFR section 61.15 (alcohol and drug offenses) [bit.ly/AirmenDUI-DWI](https://www.faa.gov/airmen/dui-dwi).

SUDs have affected the aviation community in the same way as the general population. Decades ago, a diagnosis of alcoholism was a career stopper for pilots as there was no

pathway back to medical certification. Consequently, many aircrew members were reluctant to report themselves or fellow pilots, despite the safety concerns. Recognizing this problem, industry, unions, and the government (including the FAA) developed the HIMS (Human Intervention Motivation Study) program in the 1970s. HIMS is an aviation safety program that has also preserved the careers of thousands of airline pilots. While the FAA is charged to ensure public safety, a secondary benefit of the HIMS program is that the testing required for evaluation and monitoring frequently improves the airman's health and care. HIMS also provides support to the airman's family. As a result of HIMS (and less tolerance by others), pilots affected by a SUD are now encouraged (in some cases strongly encouraged) to come forward, resulting in an improvement in overall flight safety. The airlines have also benefited; they can retain a trained pilot and improve morale with a return of almost \$10 for every dollar spent.

Airmen must report any drug or alcohol related motor vehicle convictions within 60 days, but must also report any drug or alcohol events, even if they are not convicted, at the time of their medical application. In some cases where the event was remote and the blood alcohol level was low, the AME (aviation medical examiner) is authorized to issue an FAA airman medical certificate. In cases where a pilot has committed multiple DUIs (driving under the influence), had higher blood alcohol levels or other indications of a SUD, a more extensive evaluation is necessary.

HIMS targets commercial pilots flying in a very structured environment,

so the process is different for general aviation pilots whose flying is much more varied. The FAA tailors the individual's recovery plan without compromising safety. The first step is to recognize that there is a problem. Ideally, it's the pilot in the mirror. More often, though, the impetus comes from friends, family, work, or the FAA.

Airmen should use www.faa.gov/pilots/amelocator to find a HIMS AME who can guide them through the process. Airmen may also need to undergo an evaluation by a HIMS trained psychiatrist and psychologist. Some will also need to enter into a treatment program. Participation in an aftercare program, as well as participation in support groups (e.g., AA (Alcoholics Anonymous) or NA (Narcotics Anonymous)) are usually required.

Some airmen express concern that HIMS appears to be somewhat intimidating and they wonder if it's worth their time. The answer is Yes! HIMS has a relapse rate of less than 15-percent, much lower than other SUD treatment programs. According to the Centers for Disease Control, an average of 95,000 deaths occurred from 2011-2015 due to excess alcohol use. In 2018, there were 67,367 deaths from drug overdose, primarily from opioids. Together, SUDs account for 6-percent of all deaths in the United States. These deaths are preventable.

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

I'VE GOT THE FLIGHT CONTROLS ... Or Do You?

A Game Plan for Getting Back in the Sky

By Tom Hoffmann



Goodbye 2020, hello 2021! You're definitely not alone if you wish you could just erase 2020 from your memory banks. From rampant wildfires and a record-setting hurricane season, to the COVID-19 public health emergency, 2020 threw everything but the kitchen sink at us. However, if the last year taught us anything, it's how to be resilient, a helpful virtue for pilots these days. I would venture to guess that many GA pilots were lucky to turn over a single page of their logbook in 2020. Or perhaps you were among those who wrote off the entire flying season and decided to wait for a fresh, and hopefully normal start in 2021. In either case, you're going to need a plan to knock off the rust that accumulated on your flying skills before you take to the skies and include a few things that might not have been on your radar. Since many planes and pilots are conveniently tucked away for a long winter's nap, now is an opportune time.

A good way to tackle this challenge is to consider both the fitness of the pilot (you!) plus the plane before your next flight. Let's start with the human element in this safety equation.

Mental Fitness, Check

In addition to being downright weird (I still can't get used to those eerie cardboard cut-out sports fans), 2020 was also decidedly traumatic for many people. Whether it was dealing with the loss of a family member or friend, recovering from a financial hardship, or simply the overwhelming separation anxiety experienced by those sequestered in their homes for most of the year, it was (and likely still is) a lot to comprehend. Add children to the picture and the complexity of the aforementioned issues can easily skyrocket. For me personally: been there, done that, got the T-shirt.

It's possible also that even though you might not have experienced any one major hardship or setback recently, the cumulative effects of adapting to new norms may very well have deleterious effects on your mental health. Bottom line here — don't just shrug off or underestimate signs of anxiety or depression. These things have a sneaky way of manifesting themselves at the wrong time, so be proactive when it comes to your mental and emotional health and don't be afraid to seek help if you need it. Your ability to focus and make safe decisions depends on it.

Physical Fitness, Check

A thorough way to assess your overall fitness for flight is to use the I'MSAFE checklist (Illness, Medications, Stress, Alcohol, Fatigue, and Emotions/Eating). For a closer look at each element of this check, see the article "Say Ahh — A Pilot's Guide to Self-Assessing Risk" in our Jan/Feb 2017 issue at adobe.ly/2ibKIH0. Get a head start now by ensuring sufficient sleep and a healthy diet are part of your daily routine. Making these goals part of your New Year's resolution may reward you with increased opportunities for flying down the road.

Also, be sure you're up to date with medical certification requirements, especially if restrictions in 2020 caused you to cancel or delay your exam. The FAA did provide relief to pilots with medical certificates due to expire in 2020, the most recent of which (issued in October 2020) gave pilots with expiring medicals from October 2020 through January 2021 an extra two months (or three months for Alaska pilots) to complete their exam. We'll touch more on the relief provided by the FAA's Special Federal Aviation Regulation (SFAR) 118 later, but do check faa.gov/coronavirus for any updates. You can also access



Before flying, spend some time in the flight deck to re-familiarize yourself with the layout of the controls and the proper operation of any newly installed equipment.

a FAQ page at bit.ly/COVIDRegUpdate (PDF download). Please be aware that the SFAR does not modify the requirements of 14 CFR section 61.53 regarding prohibition on operations during medical deficiency.

Currency Assessment, Check

Now that we've reviewed some of the physical and mental hurdles for returning to flight, let's look at some of the legal and experiential requirements. Remember, being legal or current is by no means an indication of being proficient when it comes to flying. The FAA sets clear

standards when it comes to what's required in your logbook before you can fly as pilot in command (PIC), within a certain time period. We won't dive in to all the specifics here, but for a complete list of these requirements, see 14 CFR section 61.57

(go.usa.gov/xkM7t) as well as 14 CFR section 61.56 (go.usa.gov/xkMHp) for flight review requirements.

You'll also want to check out the current version of SFAR 118 for any relief offered on certain training, recency, testing, and checking requirements, as well as any duration and renewal requirements that may apply to you. For example, the FAA is allowing a grace period of two calendar months for certain pilots whose flight review was due from October 2020 through January 2021 and who were current to act as pilot in command in March 2020. Double check (do not assume) you are eligible for any of these provisions. Extensions and relief efforts aside, know that just meeting these requirements alone is unlikely to make you a fully competent and proficient pilot. That takes additional effort.

Proficiency Assessment, Check

A good start toward fine-tuning proficiency is to use a flight review as an opportunity to go outside your comfort zone. Weak on crosswind landings? Been a while since you did a short field grass takeoff or simulated an onboard fire? Then make these priority items to work on with an instructor and/or during a flight review. A review that just substantiates all the things you already have a good grasp on is not exactly time (or money) well spent. The key to proficiency is practice ... and then more practice.

Even if you have a current flight review in your logbook, don't assume that action alone can ward off the rust that can accumulate over a period of inactivity. Instead, take a few flights with an instructor — just check they're not rusty too! An instructor can also help familiarize you with any possible changes in your local area due to COVID-19 (e.g., air traffic control tower hour adjustments, FBO and fuel availability, etc.). An even better idea would be to use those flights toward completing a phase of WINGS, the FAA's Pilot Proficiency Program. In addition to covering important airmanship topics, a WINGS phase also satisfies the flight review requirement. Go to bit.ly/WINGSPPP for more information.

Your return to flying after inactivity should also be appropriately paced. "Start with flying in your local airport traffic pattern," says FAA Aviation Safety Inspector (ASI) and flight instructor Allan Kash. "Knock the rust off your takeoffs and landings on a low-wind day, and then try some basic air work in your local practice area." Kash suggests building your skill base back to proficiency before taking on the challenge of a long cross-country or IFR flight (if instrument rated).

Living Room Learning

Of course, even if Mother Nature has you confined to your cozy multi-purpose living room/office/dining area, there's still plenty you can do to sharpen your flying skills. For starters, have a look at some of the many courses and live seminars you can view on [FAASafety.gov](https://www.faa.gov/safety). The following three courses will get you on your way to improved proficiency and (added bonus!) satisfy the basic knowledge (BK) requirements for a WINGS phase (search on [FAASafety.gov](https://www.faa.gov/safety) or with your browser):

- Aeronautical Decision Making for VFR Pilots, ALC-62 — BK1
- Hold Short for Runway Safety, ALC-48 — BK2
- Flight Review Prep Guide, ALC-25 — BK3

There's also the many educational opportunities that flight simulation technology can offer. Whether with an aviation training device at a school or flight training provider, or with the many at-home options now available, flight training devices and apps are an excellent way to polish skills before getting airborne. For those interested in some tips on at-home options, I highly recommend watching this Experimental Aircraft Association Tech Talk video: player.vimeo.com/video/386101528. Check out the Sim City (Nov/Dec 2017) issue of *FAA Safety Briefing* for even more good tips on how to best leverage this powerful technology: bit.ly/FAASB-Arc.

Plane and Simple

Ok, you've got your pilot plan all set, but what about your trusty aerial steed? A few essentials to consider up front are ensuring your aircraft is up-to-date on its annual inspection and oil changes, your pitot-static, transponder, and ELT checks are up to snuff, and that your aircraft is compliant with any applicable airworthiness directives. Perform an AROW check to verify you have your **A**irworthiness certificate, your **R**egistration certificate (check the expiration date), your **O**perating handbook or flight manual (including updates and supplements), and your **W**eight and balance data.

Before flying, spend some time in the flight deck to re-familiarize yourself with the layout of the controls and the proper operation of any newly installed equipment (e.g., ADS-B, GPS, tablet brackets/chargers, etc.). Check that you've updated any databases and software components, including any apps you might use on your smartphone or tablet. Then do a complete preflight inspection of the aircraft with no time constraints. That way there's no pressure to complete the check and you'll have ample time to take care of any last-minute needs, like cleaning the windshield, topping up the oil, charging the battery, or clearing out any unwanted critter nests.

National FAASTeam Operations ASI Heather Metzler suggests that after completing these steps, start the aircraft,



Do a complete preflight inspection of the aircraft with no time constraints. Then you'll have time to take care of things like cleaning the windshield, topping up the oil, or clearing out any unwanted critter nests.

bring it up to temperature, do a thorough run-up, and then return it to parking for another walk-around. "Don't be in a rush," Metzler says. "If there's anything that's questionable, contact maintenance." She adds that pilots should also be comfortable flying with a mask if necessary and suggests carrying an extra just in case yours breaks. Headsets have been known to wreak havoc on face mask straps.

Body, Mind, and Airplane

So there you have it. A plan to get both you and your aircraft fit, trim, and ready to fly this year. Here's hoping for a successful and safe year of flying! 🏆

LEARN MORE

AOPA's Don't Get Rusty video series
youtube.com/playlist?list=PLQCVyDKYo3K_AbIL_6Xvx0EZJNLgqjr0

"Getting Back in the Game" FAA Safety Briefing Mar/Apr 2014 (pg. 9)
bit.ly/FAASB-Arc



ON RECOVERING FROM RUSTINESS

Making Resilient Resolutions to Restore Proficiency

By Susan K. Parson

Photo courtesy of Garmin.

*Don't make resolutions without an action plan.
The secret to success is right in your hands.
— J. Allen Shaw (author)*

For those who live in places plagued by snow, ice, and/or bitterly cold temperatures, winter is typically the time for both pilots and planes to huddle inside and await a more clement climate. Before I moved west, I did my share of shivering through preflights, engine preheats, and hoping the airplane's rudimentary heating system would keep my teeth from chattering. I vividly remember a night when, having ferried a new Civil Air Patrol airplane back to Virginia, my co-pilot and I emerged into a gusty, icy wind. As we struggled to secure the bird, my co-pilot was grimly muttering something like "I love aviation . . . I love aviation . . . I love aviation." But no matter how much you really do love aviation, those of us who fly for pleasure often conclude that it would be far more pleasant to save our flying money and time until spring.

As we move into a new calendar year and look forward to the brighter days of spring, many may find that the rustiness from the usual winter hiatus is compounded by the persistent impacts of the COVID-19 public health emergency. While that particular challenge hasn't abated at the time of this writing, it's still important to plan for the time when both weather and health conditions permit us to emerge from hibernation.

New Year, New Challenges

*Opportunity is missed by most people because it is
dressed in overalls and looks like work.
— Thomas A. Edison (inventor)*

*If opportunity doesn't knock, build a door.
— Milton Berle (comedian)*

Earning a new certificate or rating is the most obvious opportunity to add to your base of aviation knowledge, skill, and experience, so you might productively use the winter to decide on your next aeronautical challenge and make a plan to achieve that goal. Interested in drones, more formally known as Unmanned Aircraft Systems (UAS)? Check the FAA's UAS portal (see [Learn More](#)) for information on getting a remote pilot certificate. To get started, select which type of drone user you are and click to get information on the rules and regulations that apply to your specific situation. You can then begin researching where it is safe to fly and when you need approval to fly.

Looking to upgrade your current pilot certificate or rating? Start by researching the requirements in the appropriate part of Title 14 Code of Federal Regulations (14 CFR), available in numerous apps and online sites like e-CFR (electronic Code of Federal Regulations). To get acquainted with the certification testing standards, go to the FAA's Airman Testing page (see [Learn More](#)) to review



the applicable Airman Certification Standards (ACS) or Practical Test Standards (PTS) documents. Winter is a great time to complete any requirements for ground school and aeronautical knowledge testing (commonly called the “written” exam). You might also consider putting any money that you would have spent on flying now aside to help you respond financially to the new challenge.

Another option — usually somewhat less demanding in terms of time and money — is to pursue a new endorsement on your existing pilot certificate(s). An endorsement attests to the completion of ground and/or flight training required for specific operating privileges, for airman certification testing, or for recurrent training such as the flight review or instrument proficiency check. The range of possible endorsements is as wide as the world of aviation. Just a few that you might consider adding include spins, high performance, high altitude, complex, and tailwheel. Of these, I had the most fun — and learned the most about basic flying — from earning my tailwheel endorsement in a Citabria several years back. The tailwheel endorsement training also provided my first opportunity to operate on grass. Even if you can’t take aeronautical action just yet, you can determine what you need, start the mental preparation, research possible training providers, and save at least some of the money you’ll need when you do start flying.

You Might Also Consider These ...

Good luck is when opportunity meets preparation, while bad luck is when lack of preparation meets reality.
— Eliyahu Goldratt (businessman)

Not every opportunity to add experience requires a certificate, rating, or endorsement. A new aviation challenge could be just the ticket to making you a more polished aviator. The opportunities in this category are nearly boundless, but one that allows for a productive winter response is glass cockpit familiarization training. Though many pilots now start and finish their training in glass cockpit aircraft, this technology may still be unfamiliar to others. Even if you plan to fly your favorite round dial airplane forever, you might find it both interesting and useful to sample from the glass cockpit menu. There is a lot you can — and should — do to learn the basics of the system you want to master long before you approach the actual airplane. There’s an app for almost every system nowadays, and you can learn a great deal from working through menus and programming planned trips without pressure from passengers or the pricey progression of the Hobbs meter.

Two final ideas: First is to use the “down” time to take up work on a new phase in the WINGS pilot proficiency program, and/or take advantage of the growing number of online seminars that aviation organizations like AOPA and



EAA are developing in response to the challenges COVID-19 poses to currency and proficiency.

A second is to improve your aviation communication skills. You can use an aviation band radio — the kind you might have in your flight bag as a back-up communications option — or any of the many apps or programs that let you listen in on ATC communications. While most GA pilots will not be operating into some of the nation's busiest airports, it is nevertheless instructional (and sometimes very entertaining) to tune into the ATC frequencies around New York and Chicago.

These are truly challenging times — but aviators always rise to the occasion. Make it so! ►

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LEARN MORE

FAA – Unmanned Aircraft Systems
www.faa.gov/uas

FAA – Airman Testing Page
www.faa.gov/training_testing/testing

Electronic Code of Federal Regulations
www.ecfr.gov



Certificates, Ratings, Endorsements

Certificates: The basic document that the FAA issues to a pilot is a certificate. There are several different levels of pilot certification, depending on the extent of training and testing required. These include student, sport, recreational, private, commercial, and airline transport pilot (ATP). The FAA also issues instructor certificates, such as flight instructor and ground instructor.

Ratings: Except for student and sport pilot certificates, pilot and instructor certificates have associated ratings that specify what, and/or how, the pilot is qualified to fly. The most common form is the aircraft category and class rating, with the typical rating on a private pilot certificate being "airplane single-engine land." An aircraft specific type rating is required to act as pilot-in-command of any aircraft that is more than 12,500 pounds maximum gross takeoff weight or of any turbojet. Ratings are also added to a certificate when the pilot qualifies for a certain operating privilege, such as an instrument rating.

Endorsements: An endorsement attests to the completion of ground and/or flight training required for specific operating privileges or for airman certification testing. Endorsements are used to provide operating privileges and limitations to student pilots since they do not yet have an aircraft category and class rating; to attest to an applicant's preparation for an airman knowledge test or practical test; to certify completion of recurrent training requirements such as a flight review or instrument proficiency check; and to attest to completion of training and experience for certain aircraft characteristics (e.g., tailwheel, high performance, complex, high altitude).



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Making It **LOOK EASY**

The "Magic" of Standard Operating Procedures

By Paul J. Preidecker

I grew up in a small city in Texas, about 75 miles north of Dallas. If my parents wanted to offer up a perfect weekend day, they would say "Let's go for a drive to Dallas and watch airplanes!" This was well before Dallas/Fort Worth International Airport (DFW) emerged from the earth, so our drive was to Dallas Love Field. Those were the days of gleaming Pan Am 707s, pastel colored Braniff 727s, and many other airlines that have long since disappeared from the skies. If the winds that day were from the south, that meant aircraft were landing on runway 13 (later 13L when the parallel runway was created). The perfect place to watch was Bachman Park, located near the approach end of the runway. The park was (and is) actually under the raised approach light system. My dad, who was stationed at an air base near London in WWII, would point out various facts and details about the approaching aircraft. He would often remark on how those pilots make it look so easy.

I got my first flight in a Cessna when I was nine but, as for many flyers, life did not accommodate lessons for a few more years. I started at 34, while I was in the middle of a career completely unrelated to aviation. But that job required extensive travel. Whenever I was at or around an airport, especially a major field handling hundreds of airline flights per day, I was always impressed by the smooth consistency of airline operations. I noted that the landing gear, regardless of the plane, always came down at the same

point on the approach. I also admired the precision pilots demonstrated by keeping the nosewheel exactly in place over the yellow lead-in line as they taxied to the gate. Dad was right. They did make it look easy!

Behind the Magic

Ten years after my first lesson, I found myself in class at a regional airline. Later I became my airline's chief instructor, a position I held for almost 19 years. I learned why it looked easy, even though — like most things that appear to be magic — it really takes a lot of work. Rigorous, regular training was certainly a part of the answer. But there's more.

The very nature of airline operations offers a great deal of repetition: Chicago O'Hare International Airport (ORD) to Lincoln Airport (LNK) ... LNK to ORD ... ORD to LNK. Repetition brings a certain level of comfort from knowing that you've been there and done that. Airports become familiar, frequencies get memorized, taxi routes are well known. The dark side of repetition and familiarity is the risk of complacency. It is easy to know the drill so well that you are not prepared for the unexpected. Just because you landed on runway 27L three hours ago does not mean it will be the same this time. There are just too many variables to let complacency rule the flight deck.

Even more than airport and route familiarity, the ingredient that makes it look easy and helps thwart complacency is adherence to standard operating procedures (SOPs). SOPs

are essential to flight safety. Compliance with SOPs means following the appropriate procedure at the appropriate time. It means doing it the right way, all the time, every time. SOPs are an important barrier to errors caused by fatigue, distraction, stress, or inattention. Therefore, SOPs make you a more reliable pilot. In addition, strict adherence to SOPs will allow you to more effectively deal with issues such as mechanical irregularities or unexpected weather.

I am learning that lesson all over again now. After retiring from my airline career, I started flying for a medical transport company under part 135. Once again, there are SOPs that will make it look easy and contribute to safety, but there is always a learning curve when taking on a new airplane and operating environment.

SOPs: Your Strategy for Success

Regardless of the type of flying we do, whether flying a Cub over a meandering river, or operating coast-to-coast in the flight levels, developing and adapting SOPs is key to managing safety ... and making it look easy. SOPs are not just about running checklists. SOPs are also about developing a mental model and personal philosophy about operating not just an upcoming flight, but all flights. A basic five-step process will help you create your own set of procedures. Plan-Brief-Do-Review-Renew. Let's have a look.

Plan: Whether you are flying around the pattern or around the country, you need a plan. An excellent place to start is to use the PAVE (Pilot, Aircraft, enVironment, External Pressures) model. Using this model is the first step to developing a model for SOPs.

With respect to the *pilot*, SOPs should include an honest assessment of proficiency. Has it been a few weeks since you flew in Instrument Meteorological Conditions (IMC)? Pull out your personal minimums (you have that, right?) to make sure you can manage with your skill set as it exists today, not when you first earned your rating. Consistent application of the I'MSAFE checklist (Illness, Meds, Stress, Alcohol, Fatigue, Emotions/Eating) should also be an SOP.

SOPs are about developing a mental model and personal philosophy about operating not just an upcoming flight, but all flights.

Moving to the *aircraft*, SOPs are not confined to your own aircraft. If you are a renter, you still have the responsibility as pilot in command (PIC) to determine airworthiness and condition for safe flight. SOPs should also include reviewing performance and weight and balance requirements.

Regarding the *enVironment*, the many fine flight planning tools available enable you to review everything about

STANDARD OPERATING PROCEDURES



your flight. With the COVID-19 public health emergency, your SOP should include verifying fixed-base operator business hours and service availability. Don't ever forget checking the Notices to Airmen (NOTAMs), even for a short flight across town.

A crucial planning SOP is to identify and mitigate *external pressures*. Pilots are "mission driven." We want to get there, and we want to be on time. When there are threats to mission completion, be they weather, a small mechanical problem, or day turning into night, we sometimes let the mission become more important than the threat. The key to dealing with external pressures is to recognize that most of them come from internal desires and attitudes, which makes them manageable. When I was a member of my airline's Aviation Safety Action Program (the airline version of the Aviation Safety Reporting System, aka "NASA" form), we found that almost 80-percent of crew-reported mistakes used the words "rushed" or "distracted." Many of these situations could have been prevented.

Brief: Briefings are just as important in single pilot operations as they are in a crew environment. In a crew environment, they help create a shared mental model of how a flight will be conducted. No crewmember should ever have a doubt or be surprised by what the other crewmember is thinking or doing. In a single pilot situation, it is a simple matter to brief yourself. When flying an approach in IMC, briefing the key elements of the approach out loud is a great way to create and reinforce your own mental model.

Do: Integral to well-developed SOPs are checklists and profiles. With checklists, the form may depend on your situation. Some are read-and-do. Others (typically

found in crew environments) are challenge-and-response. Many functions can be performed by using a flow, which involves taking action in a logical sequence and then using the checklist to verify. Many of us also have mnemonics as part of the checklist toolbox. The point is to develop an SOP that works for you and use it every time.

With respect to profiles, this tool provides a graphical timeline representation of actions needed at key points during various phases of flight. I strongly recommend that you create your own profiles. They give you a standard model for performing certain tasks along a timeline. For example, profiles provide a set procedure (in time and space) for retracting flaps, setting up an instrument approach, or lowering the gear. Using profiles for each phase of flight will help you perform each task the same way, every time. This type of discipline helps reduce workload and gives you the mental bandwidth to respond correctly and safely to an unexpected challenge.

Review: Whether you are using a sophisticated suite of avionics or more basic steam gauges, proper flight path management is your responsibility. Your SOP should thus include constant and consistent monitoring and review of your situation. An SOP that includes callouts at critical points can easily be built into your profiles. On approach, for example, a “1,000 feet to minimums” callout will help maintain awareness of your vertical flight path. Another situational awareness technique for your SOP could be

using TLAR (that looks about right) to quickly determine if you’re on track, and deploying its corollary, TARA (that ain’t right - adjust), if you aren’t where you need to be.

Another element for the “review” part of your SOP is the debrief. At the end of the flight, I always ask my crew-member, or myself when flying solo, what I could have done better. A debrief is a great way to learn and identify improvements for the next time. No flight is perfect, but it can still be a goal.

Renew: The end of the flight does not mean the end of SOPs for the day. Do you have a personal plan for continuous improvement? Recurrent training, on-line safety seminars, and the FAA WINGS program are all resources you can use to respond to the challenge of continuous improvement in your aviation knowledge and skill. Flight reviews and instrument proficiency checks are the minimum requirements for currency. Establishing and maintaining a program of self-study should be a part of your personal SOPs.

There’s nothing magical about being a better pilot or making it all look easy. But I hope you will respond to the challenge by making your own SOPs. Your success may even inspire a future pilot to join our ranks, which is another win for us all. ▶

Paul J. Preidecker enjoys the spontaneity of non-scheduled operations and splits his time between flying a Learjet for a medical transport company and applying best practices from his air carrier background to general aviation.



Photo courtesy of City of Chandler, Ariz.

THE AIR UP THERE



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Bringing Avid Aviators Together

Tips for Joining or Developing a Well-Run Flying Club

By Phil Dixon

Meeting and befriending fellow aviators is a true benefit of being a FAA Safety Team (FAASTeam) Program Manager (FPM). For those who have not met me or one of my fellow FPMs across this fruited plain, let me introduce our team. We are the FAA's safety educators, reaching and engaging audiences through seminars and webinars.

Soon after a seminar in St. Louis, I received an email from Jerry Kiske, a regular attendee. He told me his flying club had a one-seventh share available for purchase and that the members would like me to consider buying it. I knew the basics of flying clubs, but I had never really looked into how they worked. Jerry gave me a copy of the club's by-laws and a detailed three-page description of its 1978 Cessna 172 and cost information. Jerry named some of the members I might know. Many had attended our FAASTeam seminars and briefings, so Jerry didn't have to convince me of these members' commitment to safe practices. After doing my own due diligence, to include research, financial review, and (of course) discussion with Susie, my better half, I joined.

Chemistry Counts

I can't remember now which came first, my initial solo flight in the airplane, or the initiation barbecue at the hangar. As I got to know my fellow members over a charcoal grill, I began to realize how fortunate I was. When multiple

people have a stake in an asset such as an airplane, squabbles and personal conflicts can crop up. Here, though, the chemistry among members and spouses was positive. It was as if we had known each other for years.

So what is the recipe for a great flying club? Here are a few personal observations as well as helpful insight from club president Ray Keith on how to make it successful.

First, let me stress that the camaraderie this group enjoys is part of a formula that Ray had developed over several years. The ingredients for a sustainable group include common needs, goals, finances, and personalities. Right off the bat, for example, the owners want to fly affordably. Aircraft availability is important, but nobody is willing to compromise safety. That means no quibbles if the plane needs maintenance or an inspection. Availability also depends on community spirit; being a good member and partner means never hogging the plane every weekend or for two-week trips. Everyone contributes as well by being accountable for some aspect of managing and operating the club. Naturally, I became the safety education officer.

Good interpersonal relationships are built on personal respect, and group cohesiveness means that members enjoy flying with each other to make the occasional expensive hamburger run or to work on skills. After all, being committed to safety means maintaining proficiency through practice and recurrent training.

Formula for Success

When it comes to safety, there are no secret formulas. So when I asked Ray to summarize what he has developed for our flying club, here's what he provided.

Safety first. The expectation is for all members to keep learning. Safety starts with establishing a club safety/education officer. This club airman is the final decision-maker on whether to ground the airplane. He or she provides direction on training and WINGS program updates. He or she is the club's insurance liaison and tracks each pilot/owner's currency and certification.

Run it like a business, but remember that this kind of business also requires good member chemistry and a solid safety culture. Establish officers. Require all members to take some kind of active role in managing the group. These steps maintain a level playing field, and owner chemistry/engagement thrive when everyone has a responsibility. Check regularly to see if any factors are out of balance with the club's capabilities.

Establish by-laws that are objective and clear. This document is the foundation for a sound pilot/owner/club structure. It is specific and every pilot/owner must agree to it with a signature. By-laws should include a process to approve repairs, replacements, and upgrades to the aircraft and its equipment.

Know the club's limitations. How many pilots are too many? How many aircraft can the club manage? Which is best for the club: an aircraft rental program, or equity ownership shares? (Note: My club takes the equity share approach,



FAA photo.

which means that each member is an owner with a stake in aircraft care, maintenance, and risk management. The majority rules on decisions, and all abide by the outcome.)

Establish a financial officer role to manage or track revenue, fixed and variable expenses, budgets, planning, and forecasting. This member needs to be detailed, conscientious, and a good communicator. He or she must also be transparent in managing the club's money.

Select owners wisely. This rule has several important components: (a) Stay away from the "I'm looking for a cheaper way to fly" pilot. (b) Look for the right chemistry. Experience shows it is better to have a likeminded lower-time pilot than a 5,000-hour pilot with a "Top Gun" complex. You can change aptitude with coaching and training, but attitude is harder to change. (c) Select owners who are eager to join in for club meetings and socials, but also willing to clean up the airplane after each flight and to participate in clean-the-hangar days. (d) Look for like interests. Understand the type of owners you want and make sure the prospective member is a good fit. Check them





out! If a prospective owner claims to be safety-conscious, do you see validating actions? Is there any history of regulatory non-compliance?

Make sure a prospect's flying needs align with existing members' needs. Does the prospective owner want to make three overnight business trips per week? Does the member want to take the aircraft for an entire weekend every other week? Do owners want to allow month-long vacations that take the aircraft out of the region? It's best to clearly understand a prospect's ambitions for both flying (e.g., transportation? training? recreation?) and finances (e.g., upgrades to the aircraft) before admitting that person as a member.

Establish backups. When any given member is on vacation, the club should designate another member to fill in as needed on the absent owner's duties and responsibilities to the group.

Keep the fun factor! General aviation includes less than one percent of the population. Enjoy the time in the air and around your fellow aircraft owners and new friends.

As you can see from the pictures from our club friend Carmelo Turdo, founder of The Aero Experience photography, this group of friends were joined together from a common love of flying and from this flying club. I have since changed locations and reluctantly sold my share. I'm hoping to soon join a group that's perfectly suited for me near my new home.

Are you a member of a flying club? Share your thoughts on what makes a successful club at [@FAASafetyBrief](https://twitter.com/FAASafetyBrief) or SafetyBriefing@faa.gov.



Members of this St. Louis-based flying club enjoy regular gatherings and cookouts and consider camaraderie important to the club's success.

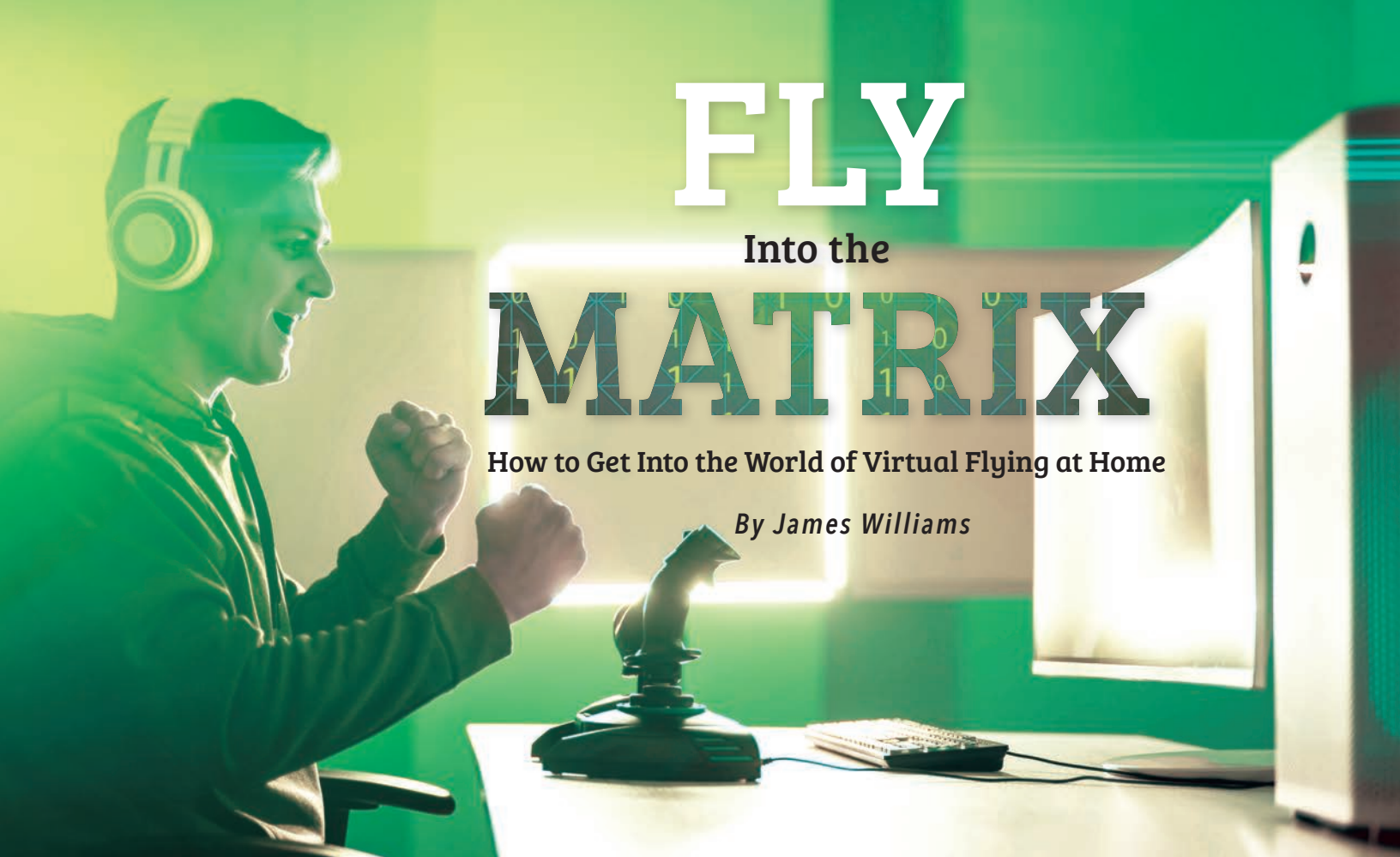
Notes from *FAA Safety Briefing* Editor Susan K. Parson

Before I moved to Arizona in 2019, I spent over 25 happy years in a northern Virginia flying club that owned and operated a C182. Like Phil, I am still searching for the right fit in a new club. My previous club shared many of the ingredients in Phil's formula for flying club success, starting with safety as a core value and recruiting members who wanted to be responsible owners, not renters. We operated as a limited liability corporation that owned the airplane; members owned shares in the corporation. New members signed a document committing to abide by both by-laws that established the legal structure and operating guidelines that specified rules for things like scheduling (e.g., a maximum of two reservations at any given time), proficiency (e.g., annual checks with the chief pilot), and procedures (e.g., dealing with mechanical issues away from home base). I strongly second Phil's advice to verify that a prospect's needs align with those of other members. In my experience, some of our biggest challenges arose from differing needs for the airplane. Lively discussions ensued when members who used the plane primarily for personal transportation wanted upgrades, while those who flew locally for pleasure and proficiency were more keen on keeping dues and rates low. ▶

Phil Dixon is a FAA Safety Team (FAASteAM) program manager in the Memphis, Tennessee Flight Standards District office. A former designated pilot examiner, he holds an ATP certificate, is a flight engineer and flight instructor, with multi-engine, single engine, and instrument ratings. He produces the FAASteAM's "57 Seconds to Safer Flying" instructional video series to inform, educate, and persuade pilots to make good decisions. Watch all his videos on the playlist at bit.ly/57secs.



Good member chemistry and a solid safety culture are two key elements of a successful flying club. A good way to accomplish this is to have each member contribute and be accountable for some aspect of the club's operation.



FLY

Into the

MATRIX

How to Get Into the World of Virtual Flying at Home

By James Williams

"Unfortunately, no one can be told what the Matrix is. You have to see it for yourself. This is your last chance. After this, there is no turning back. You take the blue pill, the story ends, you wake up in your bed and believe whatever you want to believe. You take the red pill, you stay in Wonderland, and I show you how deep the rabbit hole goes."

— Morpheus, *The Matrix*.

The world has changed. You've probably heard that phrase a lot over the last few months. You've probably thought that a Matrix of your own, where you can control the environment precisely, doesn't sound like such a bad idea. We can't do that, but we can use a virtual world to sharpen and refine skills even if we can't actually get into a real-world airplane. We talked about using these virtual worlds in our November/December 2017 "Sim City" issue, but here the focus is on what you can do to take advantage of these virtual worlds from home.

Follow Me Down the Rabbit Hole

In today's world, there is something of an arms race in the evolution of processors, and graphics cards are back in a big way. This is important because these developments enable flight simulation programs that are more sophisticated both in visual presentation and integration with real world weather and air traffic control. To determine what equipment you need in terms of hardware for good simulation, though, first you need to understand what the requirements are.

Beware the System Requirements

System requirements identify the minimum hardware and software specs required for the program to run. They are usually expressed as Minimum System Requirements and Recommended System Requirements. Minimum really does mean minimum! There is generally little to no



Here's the setup I used to test X-Plane and the MS Flight Simulator 2020.

performance margin built into those minimum specs if you want to get anything close to advertised fidelity. Fidelity loss might not be an issue for less sensitive games, but for flight simulation, it breaks immersion and can make the aircraft impossible to control. So you need a computer that meets or exceeds not just the minimum requirements, but also the recommended system requirements. Now let's decode each item in the list of requirements.

Central Processing Units (CPUs): This is the computer's "brain." It is a critical component. There are really only two CPU vendors to choose from: Intel and AMD. Intel offers its Core series of processors. Now in the eleventh generation, these come in four flavors: Core i3, i5, i7, and i9 (higher numbers are better). Each model has a subset to indicate generation (i.e., Core i9-9900K) (ninth generation). New generations usually arrive every year.



An m.2 NVMe SSD.



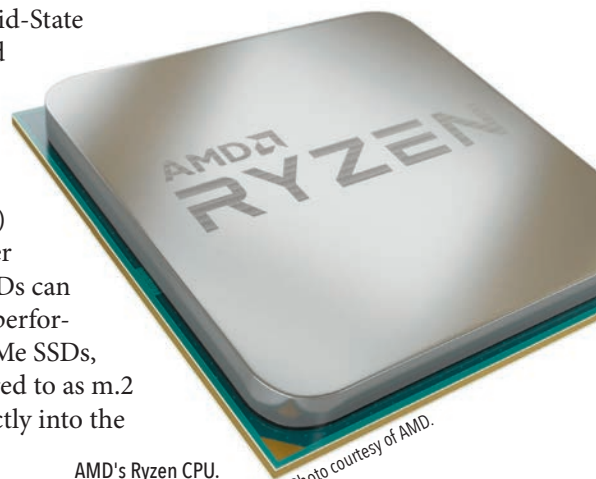
A "Comet Lake" Intel CPU.

AMD offers its more modern Ryzen processors (now in third generation) to compete with the Core series. Ryzen CPUs are usually listed as Ryzen 3, 5, 7, or 9 to give you a rough correlation to the Intel competitors. As with Core, there are multiple offerings in each group, (i.e., Ryzen 7 5800X) (third generation).

Graphics Processing Units (GPUs): Formerly known as a video card, these processing units handle advanced visuals. Pay close attention to these specs, especially if they require a minimum amount of VRAM (Video Random Access Memory). A good GPU is key to better visuals.

RAM: Random Access Memory is the computer's "working memory." More is better and capacity is measured in gigabytes (GB). 16GB is good but 32GB is better. RAM is faster for the CPU to access than the larger capacity hard drive.

Hard Drive (HD): This is the computer's long-term memory. You're trading speed of access for larger capacity. Standard modern HD capacities are measured in terabytes (TB) (1,000 GBs). But the advent of Solid-State Drives (SSD) and later NVMe SSDs (nonvolatile memory solid state drives) improved transfer speeds so that HDs can be considered a performance part. NVMe SSDs, sometimes referred to as m.2 drives, plug directly into the



AMD's Ryzen CPU.



Photo courtesy of Nvidia.

Examples of Nvidia's new Ampere (30 series) GPUs. Note the massive upscaling of the cooling required.

motherboard and offer transfer speeds much closer to that of RAM than traditional HDs. Some programs recommend not only a minimum amount of free capacity, but also suggest using a SSD.

Bandwidth: Some programs require an active internet connection to run. This is measured in megabits per second (Mbps). You can test your connection here: www.speedtest.net.

On a Windows 10 system you can see your configuration by clicking on the Windows button on the lower left side of the screen, then click Settings, About, and look at the Device Specifications.

Choose Your Path

X-Plane has been (and may still be) the de facto standard. But in August 2020, Microsoft returned to the virtual sky with Flight Simulator, generally referred to as FS2020. FS2020 is much closer to what's called a Triple A game (think Call of Duty or Madden Football). So how does it stack up to the tried-and-true X-Plane? It's tough duty but since someone has to do it, I spent some time with each simulator in order to find answers.

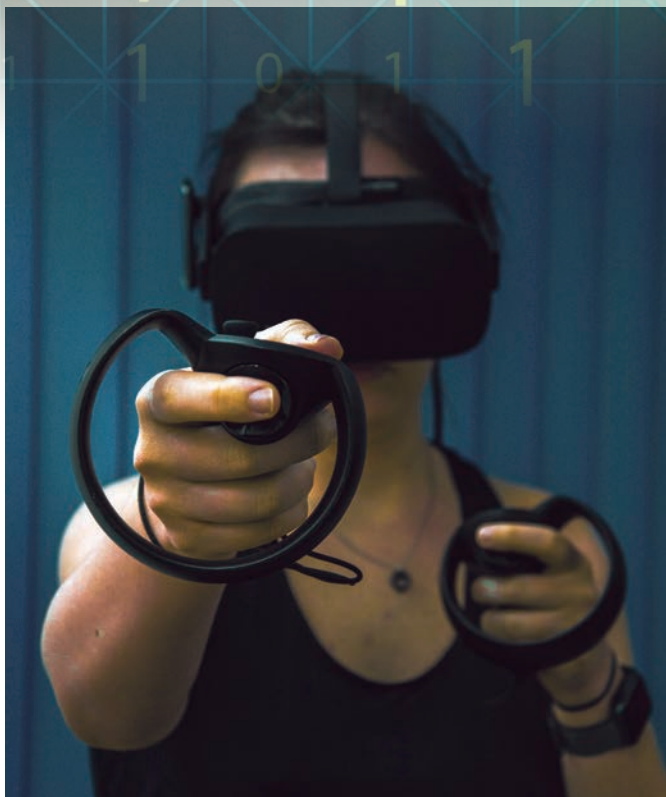
Anything less than a really modern system is likely to struggle with FS2020. X-Plane has lower system requirements and also offers a free demo download you can use to test your system. Since my venerable desktop was not up to the task of properly testing these programs, I arranged access to a more

capable system (Intel Core i9-9900K with an Nvidia GeForce RTX 2080 Ti, 32GB of RAM, and an m.2 NVMe). I "flew" both in a virtual Cessna 172 with full controls (yoke/throttle quadrant/rudder pedals). Here's how they stacked up.

Microsoft FS2020 has gorgeous visuals with many photorealistic airports and an eye-popping level of detail. When it came to the actual "flying," though, X-Plane had the edge. Its physics and handling felt more like an airplane, while FS2020 was more "arcade-like" (i.e., slightly more rubbery and forgiving). The difference wasn't stark, but it was noticeable.

X-Plane also has a significant lead in community support including upgrades, a greater and more diverse set of aircraft models, and plug-ins (some free) that expand functionality. For example, PlaneCommand allows you to give spoken commands to a virtual copilot, (i.e., flaps 10), which obediently performs these tasks. With proper hardware and controls, X-Plane is used in FAA-approved training systems. The base simulator is very similar and can be upgraded. Another point of divergence is that FS2020 requires an internet connection to work.

In the end, both options were fully capable of providing enough fidelity to serve as a virtual training ground for your flying skills. For what it's worth, I think the differences boil down to personal preference: FS2020 feels like a really polished video game, while X-Plane feels more like a simulator accessible to the general public.



VR and Gear, Lots of Gear

One of the biggest aspects of immersion and fidelity in a simulator is the visual presentation, which is dependent on the simulator programming, GPU ability to output that programming, and how you choose to display it. A large, high resolution monitor (or several) was once the best choice.

With the rise of high quality accessible Virtual Reality (VR) systems, though, multiple monitors are now optional. Until I tried VR with flight simulation, I confess I thought it was a solution in search of a problem. I don't

We can use a virtual world to sharpen and refine skills even if we can't actually get into a real-world airplane.

think that anymore. A VR system with X-Plane 11 is impressive, so if you're looking for the best possible "Matrix," VR is worth consideration. You can see how it improves flight fidelity by just, well, looking. Are you abeam the numbers? Just turn your head — no more fumbling with keyboard controls to pan the camera left or right. While you can't necessarily touch the flight deck controls, you can use the VR controllers to manipulate them. It gave me a bit of a chuckle to reach down and disengage the parking brake to taxi out.

Right now, X-Plane is the only way to go for VR support. FS2020 recently started taking sign-ups for a closed beta test, but Microsoft has only confirmed support for one headset that is not yet publicly available. If you want VR, also keep in mind that it may need additional system requirements.

Using the right controls is one of the best ways to improve fidelity of PC-based flight simulation. Yes, you can use keyboard controls, but that doesn't translate well as a stand-in for the airplane. FAA-approved trainers prohibit the use of a keyboard or mouse to manipulate the flight controls or other aircraft systems. There are a number of options now, to include VR controllers, joysticks, and yokes at various levels of sophistication. When combined with throttle quadrants and rudder pedals, you can have a great personal flight simulator. While it won't meet FAA standards, it can allow you to keep your head in the game and keep muscle memory firm.

One final word of advice: When shopping for PC components in general, and things like yokes in particular, be sure to check manufacturer's suggested retail prices (MSRPs) and patronize reputable vendors. I've seen some crazy prices in the secondary market.

Back to the "Matrix" idea: Red Pill or Blue Pill? Building your own "training matrix" takes some money and effort, but start with what you've got and build your way up. Just think of the virtual flying possibilities in a Matrix of your very own. ▶

Editor's Note: The views and opinions expressed in this article are those of the author and do not necessarily reflect the official policy or position of the FAA. The FAA also does not officially endorse any goods, services, materials, or products of manufacturers that are referenced in this article.

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

LEARN MORE

X-Plane 11 System Requirements
www.x-plane.com/kb/x-plane-11-system-requirements

Microsoft Flight Simulator (2020) System Requirements
bit.ly/MSFlightSim2020

Speed Test
www.speedtest.net



IS THERE A CARD FOR THAT?! NATIONAL CHECKLIST DAY

There is always something new to learn. Even after a lifetime of immersing myself in All Things Aviation, I had no idea that National Checklist Day might be a thing. Though it hasn't inspired an annual proclamation or a celebratory greeting card, apparently National Checklist Day is a thing, and it rolls around every October 30. Here's why.

In the Beginning ...

On that day in 1935, Boeing was set to introduce what was then the most sophisticated airplane ever: The Model 299, later (and better) known as the B-17 Flying Fortress, at Dayton's Wright Field. Boeing's chief test pilot and a company mechanic accompanied the flight crew. On the ground, an eager audience watched as the magnificent machine raced down the runway. It lifted off, began to climb, and crashed seconds later. The cause? The flight crew had failed to disengage the gust locks.

Recognizing that aircraft complexity had now outstripped the memory capacity of any human, the company created a checklist and made its use mandatory. The rest, as they say, is history. Use of checklists expanded from flight crews to other aviation functions, and its success as an

aviation safety tool carried the concept into numerous other industries.

Same Concept, Shifting Forms

While the basic checklist concept has been with us for 85 years, the structure, style, and use of this critical tool has evolved and, at least in my view, greatly improved. When I look at the checklist for the elderly-but-much-loved Aztec I flew alongside the checklist for, say, one of today's tricked out GA glass cockpit airplanes, there is a world of difference.

One thing that hasn't changed is the tendency aviators have to argue — often quite passionately — about “proper” or “correct” ways to do things. I have certainly observed plenty of arm-waving discussions about the “right” way to use a checklist. Here are the contenders:

Challenge-and-Response: Professional flight crews use challenge and response. In this model, the pilot monitoring (PM) reads an item on the checklist (the challenge). The pilot flying (PF) responds by taking the required action, and the PM verifies that the correct action was indeed taken.

Review-and-Do: This method is the one I learned and, consistent

with the law of primacy, it tends to be my go-to approach for activities like preflight inspection, engine start, and pre-taxi.

Do-and-Review: Pilots who primarily use this method argue that it is most consistent with the meaning of the word “checklist:” you perform the action and use the checklist to verify that you completed all listed items.

Go-with-a-Flow: This one — possibly just another name for do-and-review — advocates using logical and consistent flow patterns to accomplish all necessary tasks, with the printed document as a backup. Using mnemonics (e.g., CIGARS for pre-takeoff checklist) is consistent with this method.

Which one is the best? My response to that particular challenge is “none of the above” (because each has limitations) and “all of the above” (because each has its strengths). It is quite possible to effectively use each of them at different phases of any given flight. The only wrong answer? Not using a checklist at all!

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TAKING THE NEXT STEP IN SAFE DRONE OPERATIONS

So you got a drone over the holidays, or perhaps you 'gifted' one to yourself. Now what? You clicked on the FAA's DroneZone (FAADroneZone.faa.gov) to register your new gadget. (Note: registration is not currently required for drones that are less than .55 lbs and only used for recreational purposes). With the registration in hand, you ordered awesome bright orange registration numbers to dress up your drone per the FAA's guidelines (bit.ly/3motDK3).

Because you've done your research, you knew you had to take the part 107 remote pilot knowledge test to receive your remote pilot certificate. Or, if you're a recreational flyer and you're following the safety guidelines you found at www.faa.gov/uas/recreational_fliers, you're already planning for the upcoming safety test. Next, you downloaded the B4UFLy App to make sure you won't be violating any airspace restrictions. With your drone batteries charged and software updated, it's time to take to the sky and fly!

Or is it? The steps listed above do help make you knowledgeable about

airspace safety and compliant with FAA rules, but they don't make you proficient with your specific drone. The FAA does not currently require a flight proficiency test due to the lower risk associated with compliant small drone operations (e.g., low weight, no passengers, confined flight path, and multiple safe landing options). So, is flight proficiency important? Many small drones on the consumer market can be flown right out of the box. But you still need to make the correct inputs and, for successful flight operations (and to avoid damaging your shiny new drone), you need to be knowledgeable about their specific systems.

So what do you have to do to become proficient? When I get a new drone, the first thing I do is read everything about it to make sure that I understand the controls and the operational limitations. I familiarize myself with the remote controller before I even turn the drone on. Next, I make my initial flights in good weather and light winds, and I always check the B4UFLy app for airspace restrictions. I launch the drone to

about 15 feet high, and practice some simple maneuvers. I move the drone left and right; spin it in place to the left and right; fly forward, fly backward, and fly side to side. I fly the drone as if I were piloting from inside the aircraft, with the front of the drone always pointed away from me, so as not to confuse its directional orientation. The only time I fly with the drone facing me is when I take "dronie" shots of me or my boat.

Before I perform any complex drone operation, I conduct drone flights in different environmental conditions and locations. These flights increase my knowledge and skillset as I become more familiar with my specific drone and its/my capabilities. As I become more proficient, I carefully expand my flights to more complex scenarios, such as flying at night, over people, and beyond visual line of sight (with the proper waivers, of course).

Flying a drone for fun or for a business requires compliance with FAA regulations/guidance and proficiency to fly safely in the National Airspace System. Each drone is unique, and the FAA expects you to be proficient in its operation based on the complexity of the operation. If you only plan to fly 15 feet above your backyard in perfect weather conditions, you most likely can accomplish these flights safely with a lower level of proficiency. But if you want to leave the backyard, start practicing!

Mike O'Shea works with government agencies as a resource on public unmanned aircraft operations and has more than 30 years of experience working in public safety. Let Mike know what you have done to become more proficient in the use of your drone at michael.oshea@faa.gov.





CAN YOU SPOT THE MAINTENANCE DIRTY DOZEN? LET'S FIND OUT

We all make mistakes. That's just human nature. But the reality we face in this industry is that aviation is terribly unforgiving of human error. Even a slight mistake can cause a fatal accident. That's why it's important to know the Dirty Dozen — the 12 common causes of mistakes in the aviation workplace. You need to recognize their warning signs, and most importantly, learn how to avoid or contain their effects. You'll find the Dirty Dozen list at bit.ly/DirtyDozn.

Take our short quiz to see if you can identify some of the most common maintenance mishaps in the workplace. Good luck!

1) You're working on the horizontal stabilizer leading edge and instruct your new coworker to move the stabilizer up using the trim switch. He actuates the trim switch to "nose up" and drives the leading edge into the maintenance stand.

Was his mistake a result of:

- A. Complacency
- B. Distraction
- C. A lack of communication

The answer is C. Communication between technicians is key, especially during procedures where more than one technician performs work on the aircraft. Never assume what a coworker will do or has done. Communicate the most important things in the beginning of the conversation and repeat them at the end. Use logbooks, checklists, or worksheets to remove any doubt.

2) Jill checks off an inspection checklist item because it's not a critical component. She has never found any defects on all her previous inspections.

Is this an example of:

- A. Fatigue
- B. Complacency
- C. Lack of knowledge

The answer is B. Repetitive tasks, especially inspection items, are sometimes overlooked because they've been done so many times before without ever finding a fault. But don't let down your guard; stay mentally engaged. Train yourself to expect to find errors, treat all inspection items with equal importance, use checklists, and never sign off on work you didn't do.

3) You're cutting and twisting safety wire and your cell phone rings. It's your doctor with test results. You take the call and leave the floor. Your coworker steps in to complete the task and finds your safety wire pliers left behind, sitting on the engine.

This scenario is the result of:

- A. Distraction
- B. Stress
- C. Pressure

The answer is A and B. Distractions are everywhere in aviation maintenance, and they're the number one cause of forgetting things. You can't always prevent distractions but you can mitigate the effects by trying to finish the job, including the lock wire or torque seal. If you can't complete the job, unfasten the connection, mark it as incomplete for the next tech, or go back three steps when you restart the task. Shadow your toolbox for quick inventory of all equipment before closing up panels, use

checklists, and review all items that were touched/opened/removed. Stress is a factor here too. It can change your focus and emotional state in the blink of an eye. As a good practice, keep your cell phone off during maintenance and check it only on breaks.

4) Your boss tells you the aircraft must be done two days earlier than originally planned.

Is this an example of:

- A. Lack of communication
- B. Stress
- C. Pressure

The answer is C. Pressure to complete the task is always present in aviation. Don't let pressure cloud your judgment or tempt you into lowering standards. Communicate your concerns or ask for help.

Did you pick all the right answers? Learning to recognize and combat the Dirty Dozen is an important step toward preventing errors and accidents. For more, check out the Dirty Dozen Course (ALC-107) or the Maintenance Error Avoidance course (ALC-327) at FAASafety.gov.

Jennifer Caron is FAA Safety Briefing's copy editor and quality assurance lead. She is a certified technical writer-editor in the FAA's Flight Standards Service.



ON THE PLANE, SNOW IS GLISTENING ...

Among the many challenges that winter weather presents for aviators, snowfall is likely the most multifaceted foe. It can severely restrict visibility, make airport surfaces slippery, render signage and lights difficult to discern, significantly increase rollout distances and, for those hangar-less aircraft exposed to the elements, wreak havoc on delicate aircraft parts and surfaces, particularly after a heavy snow. But as the National Transportation Safety Board (NTSB) points out in a recent Aviation Safety Alert (SA), there is yet another critical danger to consider with these falling frozen flakes: wet snow.

Yes, those large clumpy flakes might be fan favorites for snowball makers, but for pilots, they pose a serious threat to safety. Issued last September, SA-082 (Flight in Snow) advises pilots to carefully assess the risk of flight in wet snow conditions. The SA stresses that while snow is typically thought to consist of all-frozen water, snowfall can also contain liquid particles either on the flakes or in liquid particles falling amongst the snowflakes. This wet snow can freeze on contact with aircraft surfaces and pose a hazard for structural, engine, and windshield ice accumulation.

The SA also mentions an investigation that revealed some common incorrect assumptions pilots have about snow. For example, many believe that flight in snow is generally safe as long as minimum ceiling and visibility requirements are met, or that snow conditions are too dry or cold to pose an icing hazard. The NTSB also recorded in its findings that some pilots believe flying in snow is safe as long as you can see through it. The Alert notes that these assumptions can

lead to an inadequate review of icing-related forecasts or tools.

SA-082 details several aircraft accident scenarios where wet snow was present, including a VFR helicopter flight returning from a glacier dog camp that encountered IMC, snow, icing, and gusting wind before impacting terrain. This occurred despite the pilot's encounter with inflight icing in wet snow on an earlier flight that same day and flight manual prohibitions against flight in these conditions.

So what can a pilot do to avoid and/or mitigate potential wet snow conditions? For starters, it's important to fully comprehend the potential for icing in these conditions, especially when the outside air temperature hovers around freezing and wet snow is possible. Keep in mind that a cloud that produces dry snow could also contain super-cooled liquid.

When you are assessing risk for flight into snow and potential icing, be sure to review more than just visibility and ceiling conditions. Check en route weather conditions along your route of flight, check for pilot reports (PIREPS), and leverage the current and forecast icing products at aviationweather.gov/icing/fip. You can also check out the Graphical Forecasts for Aviation at aviationweather.gov/gfa or the icing overlays available on the Helicopter Emergency Medical Services Weather Tool aviationweather.gov/hemst. A sound investment might be to seek



training on using and understanding these and other weather resources. Browse the course library on FAASafety.gov for online courses and webinars you can take to up your game on icing and winter weather flying. It doesn't hurt to also take some time to learn more about your aircraft's equipment features.

Finally, know your limitations. If you suspect you'll be in over your head on a flight weather-wise, cancel, divert, or make alternate plans. It's just that simple.

For more information, and for a list of helpful tips and resources on how to mitigate the dangers of wet snow, see SA-082 (link below).

LEARN MORE

NTSB Safety Alert 082, Flight in Snow
[bit.ly/SA-082](https://www.ntsb.gov/safety/alerts/082) (PDF download)

FAA Advisory Circular 91-74B, *Flight in Icing Conditions*
[bit.ly/AC91-74B](https://www.faa.gov/regulatory/policies/advisories/2014/0174) (PDF download)



INTRODUCING THE ROTORCRAFT COLLECTIVE

Getting the word out is a challenge for any organization. Businesses and governments spend millions if not billions of dollars annually on advertising, public relations, and public events all in an effort to reach audiences. We in the safety business are no different. This magazine and this column represent part of the FAA effort to promote safety. The FAA also uses social media, news releases, and safety conferences to get its messages out.

When a new entrant joins the aviation safety business, especially if it's a grassroots group of people who know their stuff, it's an exciting development. So join me in welcoming the Rotorcraft Collective to the aviation safety effort!

The Rotorcraft Collective is composed of around a dozen engineers, pilots, mechanics, accident investigators, and communication specialists from industry and the FAA. Together they produce safety videos to share with the public. The group made its video debut during the virtual 2020 FAA International Rotorcraft Safety Conference. Those who receive emails from the FAA Safety Team (FAASTeam) might have seen the Collective's promotional video for this three-day conference in October. Others might have seen it on the conference website at www.faaahelisafety.org.

During the conference, the group's first safety video, which covered the importance of thorough preflight passenger briefings, premiered on the final day. During the four-and-a-half-minute video, viewers learn that passengers should be briefed about the following: the dangers of rotor blades, how to enter and exit a helicopter, securing cargo, wearing seatbelts, and never dropping

anything from a helicopter. Narrator Randy Rowles, owner of the Helicopter Institute in Fort Worth, Texas, encourages pilots to have a colleague listen to their briefings or record them for future review.

Future safety videos will cover topics such as helicopter icing, pre-flight safety check walk-arounds, and securing internal and external cargo. Most will be under five minutes in length but still packed with information.

So how did the Rotorcraft Collective start? FAASTeam Program Manager Phil Dixon, the Collective's leader, already produces and hosts the 57 Seconds to Safer Flying series that focuses on fixed-wing aircraft. When FAA Safety Liaison Team Lead Charlie Hamilton approached him about producing safety videos for helicopters, Phil readily agreed to pitch in. FAASTeam Manager Valerie Palazzolo also got behind the project.

Dixon noted that he seeks to make videos that are informative, entertaining, insightful, and concise. He and Hamilton recruited a team in May to choose topics, write scripts, film people and helicopters in action, and edit the final products. They coordinate with the U.S. Helicopter Safety Team. Though it now takes around four months to produce each video, Dixon and Hamilton hope to eventually cut that time in half.

"Videos lend themselves to being more instructional," said Dixon, citing their effective combination of audio and visual elements. He further observed that "Social media is the newest form of mass communication."

To see the videos, access this link bit.ly/RotorCollective.

Gene Trainor is a communications specialist/technical writer with the FAA Compliance and Airworthiness Division and a Rotorcraft Collective team member.





Here's an example of GA Safety Facebook Group members supporting and helping each other.

Check out our GA Safety Facebook page at [Facebook.com/groups/GASafety](https://www.Facebook.com/groups/GASafety)

If you're not a member, we encourage you to join in on the discussions and post relevant GA content that makes the National Airspace System safer.

For the flight instructors in the group: When conducting a flight review, what is the most common flight skill weakness that you see?

This question was posted to our GA Safety Facebook page by Heather Metzler, FAA Safety Team Program Manager and WINGS Pro. Here are some of your replies:

Basic stick and rudder skills.
— Michael

Inability to fly without a GPS, can't hold altitude, can't land reasonably soft or with any kind of flare.
— Sandra

The greatest weakness I see is the ground portion of the review.
— Stephan

Crosswind landings. — Tom

Pilots need an Aeronautical Decision Making (ADM) course and a WINGS phase for flight review at FAASafety.gov. — Bob

Knowing the procedures and V speeds for their own airplane. I asked one guy to give me a short field takeoff, and he asked me if I wanted him to use flaps! — Elroy

Hard to come down and slow down at the same time.

Slow down before you start down on your glide path, it makes for better landings. — Bill

Here's the FAA Safety Team's response from Heather Metzler:

Thanks for the all the input. I really was expecting more on landings than what was posted, but you all covered a lot of ground! Good conversation on a few techniques as well.

Human Factors Dreamin'

Well, you have done it — published the FAA Safety Briefing I have been dreaming about for 35 years! It is so nice to see human factors in the Jul/Aug 2020 issue come into the light for all in the industry and not just air carriers! I've always said that most of our airline professionals now come almost exclusively through general aviation. The funding focus is on the air carrier domain, but maybe things are changing? Thanks again for warming my heart with this issue of *Safety Briefing*.

— Janeen

The July/August 2020 issue covers so many in-depth topics and empathizes with the intense stress that the COVID-19 public health emergency has caused amongst many of us pilots. The work/research and scientific metrics developed by the FAA's AIR and Flight Standards divisions was just phenomenal. Having an engineering background, the study on "End Around Taxiway" mask screens was a learning experience. I also really enjoy the work and all

the research done by Sabrina Woods, Ph.D. fitness/fatigue, the lifestyle of flying, and keeping healthy will become de rigor in flight training and not just taught as a by-the-way subject. I look forward to your continued stellar articles.

— Niven

Thank you for sharing your feedback. We enjoyed working on this issue, and we are happy to hear that we hit the mark. Check out the entire July/Aug 2020 human factors-themed issue at bit.ly/FAASB-Arc.

Up, Up, and Away

What a great couple of Safety Briefing magazines! Great info on accident prevention and safety items. Fantastic hot air balloon accident data article by Adam Magee [Sep/Oct 2020]. He does an excellent job putting things in a different light. Learned a ton from Adam's efforts with the FAA Safety Team. His magazine articles are great, courses he has for WINGS credit are fantastic, and the Lighter Than Air (LTA) Outreach Webinar series has been very informative!

— Tom

Thanks very much for taking the time to let us know you enjoyed the latest issues of FAA Safety Briefing. We were happy to include balloon safety; anyone who flies is part of the aviation community, and we aim to reach everyone we can.

Let us hear from you! Send your comments, suggestions, and questions to SafetyBriefing@faa.gov. You can also reach us on Twitter @FAASafetyBrief or on Facebook at facebook.com/FAA.

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



PUTTING THE “PRO” IN PROFICIENCY

Here’s the inside scoop on people with an outsized level of skill that often gets them classified as “outliers.”

Have you ever heard of the 10,000-Hour Rule? Based on a study by Florida State University professor Anders Ericsson, this “rule” holds that success in a given activity is based not so much on talent, but rather on lots of practice. This premise became the guiding principle of author Malcolm Gladwell’s 2008 book, *Outliers: The Story of Success*. With examples that encompass everything from basketball to The Beatles, Gladwell argues that the kind of “overnight success” generally attributed to pure talent or sheer luck is more often the result of someone willing to invest at least 10,000 hours in responding to the challenge of choice.

For those whose chosen challenge is GA flying, that’s a daunting number. Like many who fly for personal transportation or for fun, I have basic bills to pay before I can direct money into GA flying activities. As for 10,000 hours? Running the numbers shows that such a tally would require flying 20 hours each week for 10 years. If only. But there are things we can do.

Quality Counts

Quality matters. Here’s an example. A year or so ago, I heard the story of a pilot who had been hired into an airline job with something north of 8,000 hours in his logbook. The problem? He had accumulated most of those hours flying VFR in the local area. He quickly washed out of the airline’s training program. You might not be aiming for an airline career, but you can increase your proficiency by making every hour of your flying time

and money count toward that goal. Put quality into every hour you fly.

Tally and Track

One of the most effective ways to get the most out of your flying time is to make a personal piloting proficiency plan. Just like a flight plan, your personal proficiency plan should be based on a “destination” or goal. Here are a few questions to guide your goal setting process: (a) What aspect of your flying do you most need or want to improve? (b) What do you most want to achieve through flying? (c) What will it take to get there? Because you can’t effectively manage much without metrics, I love spreadsheets. When working toward a new certificate or rating, I have generally created a table showing what I needed in terms of hours and aeronautical experience. In addition to documenting each flight in my logbook, I greatly enjoyed adding to the spreadsheet and watching the advancement of my aeronautical goals.

Brief and Debrief

Perfection may seem to be an unattainable or unrealistic goal; in fact, I don’t know anyone who claims to have logged the “perfect” flight. Still, aiming in that direction will get you a lot farther than settling for “good enough.” Use pre-flight briefings to make sure you understand where you fell short last time, how that happened, and how you can fix it this time. Finish every flight by spending a few minutes to debrief. Review how it went, identify what needs your attention in the next flight, and create an action plan. Especially if the events of 2020 have limited your flying time, don’t hesitate to get help from a qualified flight instructor if you can’t figure it out or safely respond to the challenge on your own.

Let the new year’s flying begin!

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BRAD PALMER

Manager, FAA General Aviation and Commercial Division

Growing up near a small airport outside of Pittsburgh, Brad Palmer always had an interest in flying. A career in aviation was inevitable. He took flying lessons as a teenager, but didn't earn his pilot certificate until college.

"While learning to fly, I worked out on the line supporting the mechanics," he recalls. "Pittsburgh winters were cold, and I quickly realized I would rather be in the cockpit than out on that cold ramp."

Brad became a flight instructor and then a check pilot instructor at a part 141 pilot school. He flew for a private business ferrying single and multi-engine airplanes across the country. Piedmont Airlines hired him at age 20. During his ten years with the company, he also worked with the Air Line Pilots Association (ALPA).

Brad started his FAA career as a general aviation (GA) operations inspector in the Airmen Training and Certification Branch at the agency's DC headquarters. He transitioned to

the FAA's Flight Standards District Office (FSDO) in Richmond, Virginia, and later returned to FAA headquarters as an air carrier operations inspector and program manager for the pilot records database. "During my time developing the database, I had the opportunity to be in contact with families affected by the Colgan Air Flight 3407 accident in 2009," Brad said. "It was a very sobering yet rewarding experience that reminded me how the work we do affects people's lives in a positive way."

When the Department of Transportation created the Unmanned Aircraft System (UAS) Integration Pilot Program (IPP) in 2017, Brad's FAA career took a new direction. Under the IPP, which directed the FAA to partner with state, local, and tribal governments and private sector entities to accelerate safe drone integration, Brad helped develop rules to support more complex low-altitude operations. "I think the best part of working on the IPP was seeing the communication and openness between the FAA, local, state, and tribal governments, and leading edge industry partners," Brad observed. "We were all working toward the common goal of integrating drones safely into our national airspace system."

Now, as manager of the General Aviation and Commercial Division, Brad oversees the teams charged with developing and maintaining regulations and policies on pilot training, certification, and operating rules governing GA, as well as promoting aviation safety throughout the country. His wide-ranging portfolio includes managing the operational environment for everything from drones, to large commercial airplanes,



helicopters, and balloons, along with the outreach efforts of the FAA Safety Team (FAASteam) and this magazine. Brad's division is staffed with employees in 30 states.

Recent accomplishments include signing a bilateral agreement on pilot certification with the European Aviation Safety Agency, relief for certain persons and operations during the COVID-19 public health emergency, and issuing three air carrier certificates to UAS operators.

"Looking ahead, the biggest challenge for the FAA's Flight Standards Service will be safely integrating new entrants without adversely impacting traditional GA operations," Brad says. "With UAS growth and the development of UAS airspace management, we must work swiftly to further integrate—rather than segregate—these operations with traditional manned aviation."

"Safety is always the top priority," he notes. "Leveraging available technologies to decrease the GA fatal accident rate and integrate UAS will help us continue to increase safety."

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



Brad's two boys, Jett and Grey, enjoy some GA flying time with their dad. In the back seat (not pictured) is Brad's wife, Natalie and their daughter, Marley.



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