

FAA Safety

BRIEFING

July/August 2015

Your source for general aviation news and information

Four Corners of the Country

It's All About the
Journey, p. 10

Home Sweet Home ...
And Beyond, p. 13

Urgent Care for Your
Airplane, p. 18



Federal Aviation
Administration

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The July/August 2015 issue of *FAA Safety Briefing* highlights the many unique opportunities that GA flying enables in all four corners of our great nation. Articles in this issue help prepare pilots for what to expect when traveling outside their home airspace in terms of plan, pilot, and plane.



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From Sea to Shining Sea

Since my very first flight some years ago, I've had the opportunity to fly all kinds of airplanes to all kinds of places. In fact, I think it's accurate to say that I've flown in locations that range from sea to shining sea and many points in between. Those of us in aviation are blessed to see this country — America, the beautiful — from a unique aerial perspective. And, of course, the landings we make along the way provide an opportunity to meet fellow flyers, to experience the wonderful sense of community, and to share our passion for aviation.

For many of us, the majority of our normal aviation activity occurs in home airspace. There's nothing wrong with aerial joyriding in the vicinity of home base, and of course I hope you also spend some of your local flying time maintaining (better yet, improving) your flying skills.

However, airplanes were made for going places and, as we've already established, the United States offers a practically endless number of places to go. In addition to having fun — lots of it — you can learn a great deal from the process of flying from your corner of the country to some distant locale.

This issue of *FAA Safety Briefing* is intended to encourage and support this particular way of stretching your wings. A serious cross-country trip can seem overwhelming if you haven't done it before, but the articles in this issue cover basics that can perhaps be summarized in terms of preparing the *plan*, the *plane*, and the *people*. Let me offer a few thoughts on each.

Prepare the Plan

Your first flight instructor hopefully taught you that a good landing starts with a good approach. Similarly, a good cross-country trip starts with a comprehensive plan. As Tom Hoffmann's "Home, Sweet Home and Beyond" article observes, that means thorough flight planning. Keep in mind, though, that "comprehensive" goes well beyond the flight. You need a plan that covers all kinds of needs and contingencies, including getting around on the ground when you reach the destination and each of the stopping points in between.

Prepare the Plane

Preparing the plane includes a thorough preflight inspection, of course, but your "plane plan" should also include options for handling anything that goes



John Duncan is "going places" in his Titan Tornado LSA.

wrong away from home base. In "Emergency! Urgent Care for Your Airplane," Sabrina Woods offers great advice on finding a good maintenance facility when you're away from home. This advice also applies to routine needs. Be sure that the airports you intend to use have the services you need. The 100LL fuel needed for many GA aircraft is thankfully still plentiful, but don't forget to plan for other plane-related requirements (e.g., servicing and replenishing oxygen, if so equipped).

Prepare the People

Though it appears last in this list, preparing the people — pilot(s) and passengers — is really the top priority in cross-country flight planning. In "It's About the Journey," Susan Parson stresses the importance of maintaining the right mindset for GA flying safety, while Sabrina Woods tackles the practicalities in "Taking Care of Self."

Techniques for preparing your passengers (i.e., managing their expectations) could be an entire issue — and, in fact, the magazine staff did exactly that by creating the GA Flying Companion's Guide in last summer's Oshkosh issue. If you missed it, or if you just need a refresher on key points for prepping GA passengers, you can find it on the FAA website at: www.faa.gov/news/safety_briefing/2014/media/JulAug2014.pdf.

Achievement-oriented people that we are, pilots tend to focus on all the tasks and practicalities that we address in this issue of the magazine. That's important, because planning, preparation, and solid performance are the essential foundation for safe GA flying. But don't forget to include fun, because that's what this activity is all about.



NTSB Issues Safety Alerts for GA Pilots and Mechanics

The National Transportation Safety Board in April issued four Safety Alerts to general aviation pilots and mechanics highlighting safety issues identified in several recent accident investigations. Three of the Safety Alerts are pilot-focused and address mountain flying skills and survival equipment considerations; transition training before flying an unfamiliar aircraft with different flight characteristics or avionics; and performing thorough and advanced preflight checks on aircraft that have just received flight control or trim system maintenance. The Safety Alert aimed at mechanics discusses flight control and trim system misrigging problems. A safety video (<http://go.usa.gov/3ZYDH>) was also released that complements this Alert and shares the account of two pilots who experienced a reversed trim system in-flight. For a complete list of the NTSB Safety Alerts, go to <http://1.usa.gov/1amlSic>.

FAA Plans New App for Unmanned Aircraft



B4UFLY is a simple, easy-to-use smartphone app that users will be able to access before they operate their unmanned aircraft to determine whether there are any restrictions or requirements in effect at the location where they want to fly. The FAA announced the app at the 2015 Association for Unmanned Vehicle Systems International (AUVSI) Unmanned Systems Conference in Atlanta. The agency plans to release the app to approximately 1,000 beta testers this summer. The beta test is

expected to run for several months, after which the FAA plans to make B4UFLY available for the general public. The initial release is planned for iOS devices only, with an Android version to follow.

B4UFLY complements the “Know Before You Fly” educational campaign, which provides prospective UAS operators with information and guidance they need to fly safely and responsibly online at <http://knowbeforeyoufly.org>. The FAA is a partner in the effort with the AUVSI, Academy of Model Aeronautics (AMA), and the Small UAV Coalition.

Flight Service: Choices and Changes

Pilots continue to have a choice in their FAA online service provider. The FAA has awarded the Direct User Access Terminal Service (DUATS II) contracts for preflight services to Computer Science Corporation (CSC) and Lockheed Martin (LM).

The DUATS II contracts will enhance the ability of pilots to conduct safe operations by enabling them to receive crucial information including current weather conditions, advisories, Notices to Airmen, Temporary Flight Restrictions and airport closures. Pilots can gain access to this data via the Internet on a PC or web-enabled device.

DUATS II services include graphics that can be tailored for a pilot’s route of flight and provide assistance with planning during adverse weather conditions. In addition, pilots will find functions for Visual Flight Rules (VFR) flight plan activation and closures, enhanced search and rescue, along with alerting services for adverse conditions. Plain language and interpretation tools are also available to help describe weather conditions.

Beginning October 1, 2015, Enroute Flight Advisory Service (EFAS), known as “Flight Watch” in air-to-ground communications, will be available on the Flight Service Common Frequency 122.2 and all Remote Communication Outlet (RCO) frequencies. Realigning EFAS to the Inflight position is part of an effort by Flight Service to streamline its service delivery and provide more benefits to the flying public. While the proposal includes discontinuing service over Flight Service Common Frequency 122.0 and the high level discrete frequencies, a pilot will have access to all flight services with one call, simplifying the pilot’s ability to gather critical safety of flight information.

In addition, Flight Service is proposing to dis-

continue Remote Airport Advisory Service (RAAS), a service seldom used by pilots, and implement mandatory domestic International Civil Aviation Organization (ICAO) flight plan filing for civil aircraft. These proposed changes will be published in the Federal Register and public comments will be reviewed and considered.

For additional information on the DUATS II services that will put automated briefing and flight planning tools at your fingertips, visit the FAA's DUATS II Internet-based services websites: www.duats.com (CSC) and www.1800wxbrief.com (LM). For more information on the Flight Service program, please visit the Flight Service web page at www.faa.gov/go/flightservice. To provide any feedback or questions, click on the Contact Us link on the left side of the Flight Service page.

GA Survey Needs Your Help

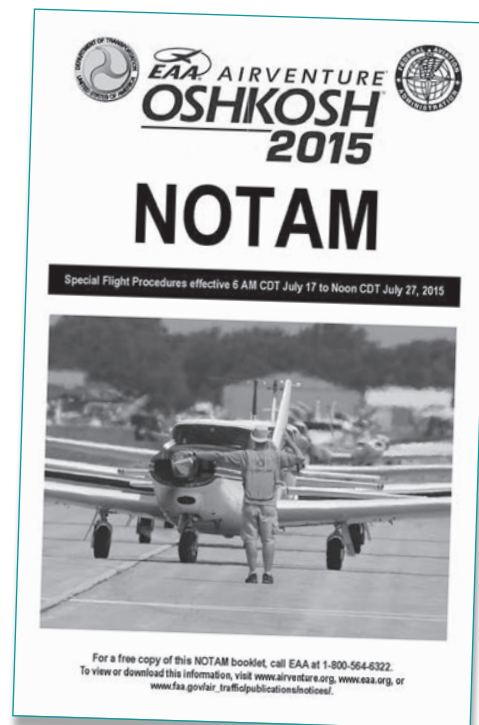
Did you receive an invite to participate in the 37th annual General Aviation and Part 135 Activity Survey (GA Survey) for reporting on calendar year 2014? If so, please send in your response — even if you did not fly your aircraft in 2014.

Please know that your responses will be kept confidential. The information will be used only for statistical purposes and will not be released in any form that would reveal an individual participant.

Tetra Tech is an independent research firm that conducts the GA Survey on behalf of the FAA. You can contact Tetra Tech with questions at 1-800-826-1797 or via email infoaviationsurvey@tetrattech.com.

Oshkosh NOTAM Published

For one week each year, EAA AirVenture in Oshkosh, Wisconsin, has the highest concentration of aircraft in the world. Careful reading and adherence to the procedures in the special event Notice to Airmen (NOTAM) are essential to maintaining safety. Flight planning should include thorough familiarity with NOTAM procedures, as well as knowledge of primary and alternate airports. Carry a copy of the NOTAM for in-flight reference, which can be downloaded at <http://bit.ly/1K6nQ5T>.



Safety Enhancement Topics

July: Managing Unexpected Events - Training and preparation can help pilots manage the startle response and effectively cope with unexpected events.



August: Flight Risk Analysis Tool – Proper use of a FRAT tool can help pilots make better go/no-go decisions.



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



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Have ADS-B Questions?

Starting in 2020, aircraft must be equipped with Automatic Dependent Surveillance-Broadcast (ADS-B) Out to fly in most controlled airspace. Will you need to equip? It depends on where you fly. For more on how you should equip your aircraft, what equipment has been FAA certified, and what the benefits of ADS-B Out and ADS-B In are, go to www.faa.gov/go/equipADSB. You can also stop by the FAA Center at AirVenture to ask questions or get an ADS-B check-up on equipment you already have.

Rotorcraft Conference Educates Operators

With a common goal of improving helicopter safety, close to 300 pilots, mechanics and other aviation professionals from around the world converged near Fort Worth, Texas, for the 2015 International Rotorcraft Safety Conference.

For three days, participants discussed FAA efforts to reduce the accident rate, considered what injury patterns reveal about accidents, and analyzed lessons learned from survivors of accidents and near accidents.

Although the number of rotorcraft accidents nationwide has trended downward since 1983, the number of fatal accidents has remained steady.

This trend has prompted a renewed commitment to providing quality training opportunities for pilots and mechanics in this field. As NTSB Member Robert Sumwalt told attendees at the 2015 conference, "The only acceptable number [of accidents] is zero."

The conference also focused on strategies for accident prevention. During special breakout sessions, pilots and mechanics improved decision-making and personal risk assessment skills, gleaned accident avoidance tactics, and enhanced their ability to conduct effective autorotations.

Industry and FAA representatives discussed how they can work together to update federal rules and regulations to improve industry-government processes and reduce the time it takes for federal approval of products while enhancing safety for the operator.

CACI Update

As I've mentioned in previous columns, one of my top priorities is to make interfacing with our medical certification system more efficient and airman-friendly. My goal is to take the roughly 90 percent of airmen who walk out of the Aviation Medical Examiner's (AME) office with a medical certificate in hand and boost that to 95 percent. That will help make the process easier on that extra 5 percent of airmen and free up our staff to focus on more challenging cases. Of course, I want to do this while still ensuring the safety of our National Airspace System (NAS). One of the best tools we have to accomplish this is the Conditions AMEs Can Issue (CACI) program that the FAA's Office of Aerospace Medicine initiated in July of 2013. The CACI program allows AMEs to directly issue medical certificates for conditions that used to require deferment to either the Regional Flight Surgeon (RFS) or the Aerospace Medical Certification Division (AMCD) in Oklahoma City. See the box below for conditions that qualify for CACI.

How is CACI Going?

Like any change to a critical safety system, it was important to evaluate how the CACI program was working. Was it accomplishing what we set out to do? Was there any adverse impact on the safety of our system? A Quality Assurance review of CACI data initially showed an increase in AME errors related to the process. To better understand this issue, I asked the Safety Management System (SMS) team from the FAA's Civil Aerospace Medical Institute (CAMI) in Oklahoma City to review case data from the early stages of the CACI program. The SMS team found that overall the system was a success. Still, there were definitely some areas where we could improve.

What Does This Mean for You?

One of the critical questions the SMS team asked was: For CACI conditions, was the new process utilized? The team found that 39 percent of the time the AME inappropriately deferred or special issued a CACI eligible airman exam. Those were instances when you, the airman, should have walked out of the AME's office with an unrestricted medical certificate but instead had your medical certification process unnecessarily lengthened or made more difficult. We are working on our end to make sure AMEs are properly educated on the CACI process so they understand where and when to apply it, but you can

also play a role in making sure your next medical exam goes smoothly.

If you believe you may fall under one of the listed CACI conditions, please take a few minutes to look over the appropriate CACI worksheet or AME guidance (available at: https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/ame/guide/certification_ws/). These worksheets describe what your AME will be looking for, and also what tests they will need to see, usually conducted within the last 90 days. If you can schedule your treating doctor's appointment in that time frame, you might consider bringing the CACI worksheet with you to make sure he or she records all of the information the AME will need. That will allow for the best possible outcome of your medical exam.

Also, please check back on CACI conditions well before your next medical exam, because we plan to add more conditions to the program as part of our push to get as many airman into the air as can be safely done. If you have a CACI eligible exam, please let us know how it went so that we can make this process the best possible for everyone involved.

James Fraser received a B.A., M.D., and M.P.H. from the University of Oklahoma. He completed a thirty year Navy career and retired as a Captain (O6) in January 2004. He is certified in the specialties of Preventive Medicine (Aerospace Medicine) and Family Practice. He is a Fellow of the Aerospace Medical Association and the American Academy of Family Practice.

CACI Conditions

These are the current CACI conditions:

- Arthritis
- Asthma
- Colitis
- Glaucoma
- Hepatitis C – Chronic
- Hypertension (High Blood Pressure)
- Hypothyroidism
- Migraine and Chronic Headache
- Pre-Diabetes
- Renal Cancer
- Prostate Cancer
- Testicular Cancer

If you have one of these conditions, meet the specified requirements, and otherwise meet the requirements for a medical, your AME may issue you an unrestricted medical certificate without needing to contact the RFS or AMCD.



Ask Medical Certification

COURTNEY SCOTT, D.O.
MANAGER, AEROSPACE MEDICAL
CERTIFICATION DIVISION

Q1. Can you please explain, in simple terms, the regulation for Light Sport Pilots? I understand that a previous certified pilot who fails an FAA Class III Medical Examination is disqualified from getting a Light Sport Pilot Certification, whereas a non-pilot who has and medically qualifies for a driving license can receive the necessary flight and knowledge instruction and ultimately receive his/her Light Sport Certification. Is this the case? I am certain that there are very many drivers who have and qualify medically for a driver's license that would not be able to pass an FAA Class III pilot medical examination, many are likely in very poor general health so I just don't understand this.

A1 Excellent question and excellent point. Your presumption that someone who has never applied for an FAA medical but has a valid state issued driver's license is able to pursue Light Sport is correct. There is a self-certifying piece which, if answered honestly, would preclude a medically unsafe person from flying. However, there are many conditions and medications that could be unsafe that the airman likely would not recognize or understand, and could be missed in self-certification. Unfortunately, the FAA currently has no way to monitor this other than through working with the National Transportation Safety Board on subsequent investigation of crashes.

Q2 Will a pilot who has had Gamma Knife therapy for an Acoustic Neuroma and is doing very well ever be able to get a regular medical again?

A special issuance year after year with its mandatory medical examinations and reporting requirements is not an inconsequential burden.

A2 Acoustic Neuroma, also known as Vestibular Schwannoma, is a tumor involving Cranial Nerve VIII (Audiovestibular Nerve). Although benign, these tumors can grow and have a devastating impact on balance and hearing and if untreated may result in death. In recent years, additional modalities of treatment for Acoustic Neuromas, such as the Gamma Knife, have evolved. These have allowed the FAA to consider allowing airmen who have had their tumor successfully treated to fly under a Special Issuance. In younger airmen, it is important to ensure they do not have Neurofibromatosis Type II (NF2) as there may be bilateral tumors as well as other CNS Tumors.

For readers unfamiliar with Gamma Knife therapy, this is a procedure that allows for focused radiation directed to just the tumor itself. Typically it stops further growth of the tumor, but not always. Some tumors continue to grow and require surgical intervention. In very extreme cases, the tumor may undergo malignant degeneration. A small number of patients will complain of post treatment disequilibrium. Therefore the tumors are followed for a number of years to ensure that the tumor does not grow, hearing remains stable, and facial nerve function remains intact. Airmen then may be released from the Special Issuance and cautioned about any further problems.

Courtney Scott, D.O., M.P.H., is the Manager of Aerospace Medical Certification Division in Oklahoma City, Okla. He is board certified in aerospace medicine and has extensive practice experience in civilian and both military and non-military government settings.

Send your questions to
SafetyBriefing@faa.gov. We'll
forward them to the Aerospace
Medical Certification Division
without your name and publish the
answer in an upcoming issue.

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FAA Safety Center Forums

July 20—July 26, 2015

	0830—0945	1000—1115	1130—1245	1300—1415	1430—1545	1600—1645
Monday, July 20	<i>Weather and Next Generation for GA</i> Robert Obma NATCA GL0061839	<i>Flying the Colorado Rockies Safely</i> Bill Standerfer CFI, FAAS Team Rep GL0061847	<i>Law Enforcement Use of Unmanned Aircraft Systems</i> Alan Frazier Univ. of North Dakota GL0061848	<i>What's New in FAA Legal Enforcement</i> Michael F. McKinley FAA, Washington DC GL0061861	<i>Aviation Physiology—Your Body Up There</i> Rogers Shaw Civil Aeromedical Institute GL0061862	<i>Unmanned Aircraft Systems</i> Bill Crozier UAS Integration Office Washington DC GL0061863
Tuesday, July 21	<i>Factors that Affect Altitude</i> Rogers Shaw Civil Aeromedical Institute GL0061883	<i>Hangar Flying</i> Rod Machado Aviation Speakers Bureau GL0061886	<i>Equip 2020 and the ADSB System</i> Mark "Hoot" Gibson NextGen Institute GL0061887	<i>Ditching and Water Survival</i> Robert Shafer U.S. Coast Guard Auxiliary GL0061888	<i>Upset Recovery Loss of Control</i> John Dye FAAS Team Rep GL0061889	<i>How to Build a Flying Club Safety Management System</i> Paul Koziol Discover Aviation Center Flying Club GL0061891
Wednesday, July 22	<i>Navigating the FAA Medical</i> Gregory Pinnell MD, AME GL0061897	<i>Not the Flight Service You Once Knew</i> Joe Daniele Lockheed Martin GL0061898	<i>Taking your Tablet Flying</i> James Whittles Western Michigan University GL0061899	<i>Avoiding Unwanted Adventure</i> John and Martha King King Schools GL0061903	<i>Safety Starts on the Ground</i> Andy Miller FAAS Team Rep GL0061904	<i>Chicago Vertiport & Tiltrotors</i> Michael Conklin President Vertiport Chicago GL0061905
Thursday, July 23	<i>Night Flying Hazards / Preventive Measures</i> Bob McCabe FAAS Team Representative GL0061906	<i>General Aviation Awards Recognition</i> <i>CFI / AMT / AV / FAAS Team Rep Of the Year Presentations</i> GL0061907	<i>FAA Administrator Session</i> <i>EAA Honda Pavilion #7</i>	<i>Was it Really Worth It?</i> Greg Feith Aviation Speakers Bureau GL0061908	<i>Single/Dual Crew Resource Management</i> Rogers Shaw Civil Aeromedical Institute GL0061910	<i>Hot Aeromedical Issues!</i> James R. Fraser, MD Federal Air Surgeon GL0061911
Friday, July 24	<i>Interceptor Operations TFRs and You</i> Kevin Roethke NORAD Peterson AFB, CO GL0061913	<i>VOR Minimum Operational Network Status</i> Vince Massimini Rick Niles Miter Corporation GL0061915	<i>Takeoffs and Landings Preventing an Accident</i> Woody Minar FAAS Team Rep GL0061916	<i>Those Daring Pilots And Their Flying Machines</i> Greg Feith Aviation Speakers Bureau GL0061918	<i>Air Traffic Assistance During an Inflight Emergency</i> Dean Brown IND Air Traffic Control Center GL0061919	<i>Unmanned Aircraft Systems</i> Bill Crozier UAS Integration Office Washington DC GL0061920
Saturday, July 25	<i>Understanding Airspace: A Hands-On Approach</i> Peg Ballou Ballou Skies Aviation GL0061926	<i>Mind Over Matter: Strengthening The Weakest Link</i> George Perry AOPA Air Safety Foundation GL0061927	<i>Thunderstorm Avoidance Using Airborne NEXRAD Radar</i> David A. Strahle, M.D. CFI GL0061930	<i>Partial and Total Engine Failure on Takeoff</i> Tom Turner FAAS Team Rep GL0061932	<i>Is Your Airplane Airworthy?</i> Larry Bothe FAAS Team Rep GL0061935	<i>Why is There Still Lead in Aviation Fuel?</i> Terry Michmerhuizen Western, Michigan University GL0061937
Sunday, July 26	<p>Aviation Safety Videos Shown All Day Long—Come Join Your Fellow Pilots For a Movie or Two! (Times listed here are approximate start times)</p> <div> <div>0830—Friendly Flight Paths (GL0061948)</div> <div>0905—Fuel Awareness (GL0061951)</div> <div>0940—Midair Collision Avoidance (GL0061952)</div> <div>1025—Avoiding Spatial Disorientation (GL0061953)</div> </div> <div> <div>1105—Tips on Mountain Flying (GL0061954)</div> <div>1145—Pilot Operations at Non-Towered Airports (GL0061957)</div> <div>1235—Evaluating In-Flight Weather (GL0061958)</div> <div>1320—Single Pilot IFR (GL0061959)</div> </div>					

Appropriate **AMT / WINGS** credit will apply to events by using associated select **#GL0061XXX** listed in each box

FAA Forum & FAA Exhibit Hall open daily at 8:30 a.m.
 Schedule is subject to change; for updates check the QR code



<https://goo.gl/Sey90T>



The Final Frontier

Flying in the Extremes of the United States: Alaska and Hawaii

JAMES WILLIAMS

The beauty of Hawaii from the air.

In the spirit of this issue we are looking at flying across our country, and there's no better way to highlight the differences and similarities than with our two newest states, Alaska and Hawaii. Both present breathtaking vistas, but come with potentially deadly challenges.

Aloha

Hawaii offers magnificent scenery and a landscape that makes the archipelago very scenic for traveling by air. You could be forgiven for thinking its tropical climate means you have no worries about flying during your visit to the islands. FAA Safety Team (FAASTeam) Program Manager Scott Allen explains, "Hawaiian flying goes from sea level to 13,796 feet mean sea level." He continues, "A landing at Kalaupapa Peninsula [site of the lifework of Father/Saint Damien, famous for his work with leprosy patients] on the island of Molokai occasionally 'blesses' its visitors with spray from breaking waves ... sans floats, it just doesn't get much more sea-level than that." But as an island chain that is made of volcanos, a strong background in mountain flying is required.

Another concern Allen points out is the fast-changing micro-climate weather around the mountain ridges. "Just because it was clear five minutes

ago says nothing about the next five minutes." Also adding to the need for instrument proficiency is what Allen refers to as the "fiction of moonless-night-overwater-VFR". He explains: "The stars above and lights from boats below can become indistinguishable, and moonless-night-overwater-VFR is absolutely unforgiving. Just say 'no.'"

The Great White North

Alaska is similar to Hawaii in that it offers amazing views and a wide variety of terrain. Another similarity is its dependence on the airplane as a primary mode of transportation; more so than in the lower 48. The difference, though, is that the barrier to other forms of transportation is the vast distance and rugged terrain rather than the Pacific Ocean — although there's plenty of that too.

Alaska also can feature rapidly changing weather so a good briefing and some local knowledge are very important. "One of the things most visiting pilots don't know about is the Alaska Weather Camera program," explains Mike Yorke, FAASTeam Program Manager for Anchorage. "The cameras allow pilots and briefers to get a first-hand look at exactly what the weather is doing at many airports and mountain passes. It's a really great resource and I'm always surprised how many pilots aren't aware of it," Yorke continues. You can see the camera feeds at: <http://avcams.faa.gov/>.


Alaska and Hawaii both present breathtaking vistas but come with potentially deadly challenges.

Another thing to consider is having a beefier flight plan and taking into account where your alternates might be. Rugged terrain and the great distance between airports places a huge premium on getting the flight plan calculations right and giving yourself plenty of reserve fuel because the nearest alternate is probably more than a “short hop” away. It goes without saying that some mountain flying practice is also in order.

Check it Out

One thing that spans both of our “frontier states” is the need for a good local checkout. Hands-on experience from someone who is knowledgeable of the local area and condition can be invaluable. One way to really get the most from this learning opportunity is to ask the FBO or CFI to go beyond the basic checkout requirements.

You Are Not Alone

Another resource available to you is the FAAS-Team. Most people don’t think about it but there are FAAS-Team Program Managers and Representatives across the country who are only a phone call or email away. These folks are experts in aviation living where you want to fly, and they want to help you. Some are AMTs; others are pilots. They might be able to recommend good shops in the region or maybe some specific training goals for your upcoming trip. But wherever you fly, there’s probably a FAAS-Team person that can provide some critical intelligence before your trip. To find your FAAS-Team ally please visit: <https://www.faasafety.gov/FAASTApp/directory/> 

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



The rugged terrain of Alaska is both beautiful and potentially dangerous.

GA SAFETY ON THE GO



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It's About the Journey



Cultivating the Right Mindset

SUSAN PARSON

Photo by Raymond G Stinchcomb

Life is a journey, not a destination.

— Ralph Waldo Emerson

Airplanes didn't exist in Mr. Emerson's time, but the essence of his deft observation certainly applies to general aviation (GA) travel around the four corners of the compass. Even though we pilots love flying as an activity in and of itself, the goal-oriented qualities essential to getting us to and through the certification process make us particularly vulnerable to destination-focused "get-there-itis."

This mentality gets an additional boost from technological advances. The combination of today's more reliable engines, more comfortable airframes, and more capable avionics can vastly improve our chances of meeting a transportation-by-GA objective. When piloting a sleek GA bird whose glass panel gadgets can put airliners to shame, it's easy to think of the airplane as your personal airliner and press on. The problem with the personal airline destination focus, of course, is that even the most capable GA aircraft can't come close to airliner-style perfor-

mance, and most GA pilots lack the kind of intensive training and extensive experience of their airline counterparts. As too many accidents show in painful clarity, these facts do not give us anything close to the capabilities that allow air carriers to operate safely in almost any weather condition.

For this reason (and others to be discussed shortly), one of the most important safety steps we GA pilots can take is to reset — or rebalance — the mindset in favor of enjoying the journey rather than fixating on the destination. Just as we are supposed to approach every landing primed to execute a go-around if needed, we need to approach every trip with a diversion mentality — and be pleasantly surprised if we make it to the originally-intended destination as scheduled.

Time to Spare ...

Let's get this part out of the way first. You've probably heard the "time to spare — go by air" maxim. Please take it to heart, and make it part of your GA safety mindset. If you or one of your passengers absolutely, positively, *has* to reach the desti-

nation by a specific time, do the smart thing. Either use a more reliable form of transportation, or build plenty of buffer time into the overall trip. The “external pressures” part of the PAVE risk management checklist (Pilot, Aircraft, enVironment, External Pressures) can create an incredibly powerful incentive to keep heading to the destination, regardless of other circumstances. So do whatever it takes to avoid the vise-like pressure to press forward.

See What’s In Between

The most important reason for going from one place to another is to see what’s in between, and they took great pleasure in doing just that.

— Norton Juster, *The Phantom Tollbooth*

When flying “to” a specific place, too many of us focus almost exclusively on what’s “here” and what’s “there,” with little thought to anything of possible interest in between. Though I have a strong tendency to do this myself, I try to remember and learn from the wisdom of my parents. After one of my brothers moved to the West Coast of the United States, they made four separate visits ... by car. When their baffled eldest daughter (that would be me) inquired as to why they didn’t just jump on an airliner, the answer was simple: “Because there’s so much to see between here and there.” They never took the same route twice, and they made the most of each trip

because they were open to the pleasure of all the places they saw en route.

I had a great chance to practice seeing what’s in between several years ago, when I joined two friends for a no-kidding cross-country flight from Virginia to Arizona in their Cessna T206. With multiple legs flown over three days outbound and two days returning, we had many opportunities to see some of this country’s endless variety. That leads to my next point.

Enjoy the Experience

The journey matters as much as the destination. By engaging in the moment on set, I’ve stopped rushing and now find pleasure in the collaborative process — the characters, the costumes — rather than worrying about the finished product.

— Michelle Dockery

Have fun as you see and experience all those “in between” places on the journey. As the “Downton Abbey” actress observes, engaging fully in each moment along the way is the key to enjoying the

One of the most important safety steps we GA pilots can take is to reset — or rebalance — the mindset in favor of enjoying the journey rather than fixating on the destination.

Photo by Tom Hoffmann



experience and making memories that you'll enjoy for a lifetime. Some of my favorite and most enjoyable memories from the GA cross-country voyage were formed during the stops we made. For example, the first day featured a celebratory lunch in Lexington with two more flying friends, one of whom had just been named CFI of the Year. At another stop, a friend of a friend met us at the airport, provided transportation to a local hotel, and topped it all off by taking us to dinner and an evening tour of his hometown. Still another stop was memorable because absolutely nobody was at the small west Texas airport where we stopped for fuel. There was a code to access the cozy little FBO, and our absent hosts had thoughtfully left a basket of snacks for itinerant pilots. But we did not see another soul on that stop — an experience we could never imagine at any airport in our congested home airspace.

Learn from the Journey

Sometimes it's the journey that teaches you a lot about your destination.

— Drake

Being pilots, we can also enjoy the experience of aviating as we motor from “here” to “there.” The destination is at least partly about improving pilot knowledge and skills, but the enjoyable process of flying the airplane can also teach us a great deal as long as we are open to the lessons it can teach. On the Virginia to Arizona trip, my pilot companions and I experienced weather, terrain, and atmospheric

conditions (e.g., high density altitude) that none of us had ever encountered before. We all ended the trip having learned a lot — but we also learned how much more there is to master in the magical art and science of aviation.

In addition to the lessons we learned about flying, we also learned (again) just how wonderful our fellow aviators can be.

Adjust Your Expectations

I can't change the direction of the wind, but I can adjust my sails to always reach my destination.

— Jimmy Dean

Adapted for aviation, Jimmy Dean's astute observation is an important element in the “savor the journey” mindset. In GA airplanes, as in sailboats, we can't control or change the direction of the wind. Nor can we overcome bad weather or inhospitable terrain by fighting it head-on. What we *can* do is adjust our expectations to accommodate diversion or delay, and adjust our tactics — e.g., course, heading, altitude, airspeed — to work safely around environmental obstacles.

There is much to be said for GA transportation, and it can offer a pleasant and convenient alternative to the airline world. Just remember to enjoy the journey! ✈️

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TOM HOFFMANN

Home Sweet Home ... *and Beyond*

The Importance of Understanding Your Aviation Environment

When it comes to landscape variety, the United States is all over the map, literally. I often think about how lucky we are to live in a country that's a near perfect microcosm of the planet's best geographic features and natural wonders. Everything from majestic snow-capped mountain ranges and balmy beaches, to bone-dry deserts and wildlife-rich wetlands, it's all here for us to see and enjoy. And thanks to the robust general aviation infrastructure we have here in the U.S., many of these areas are just a cross-country flight plan away.

But while we may revel in the variety of landscapes our nation has to offer, that luxury does come at somewhat of an "extreme" price. Pilots might be surprised to know that the United States is home to some of the hottest (*Death Valley, Calif. 134 °F*), coldest (*Prospect Creek, Alaska, -80 °F*), windiest (*Mt. Washington, N.H., 231 mph*), wettest (*Kauai, Hawaii, 350 days of rain per year*), snowiest (*Mt. Baker, Wash., 95 feet in one season*), and sunniest (*Yuma, Ariz., 4,000-plus hours of annual sunshine*) places on Earth. And these aren't just national records — we're talking global!



These types of extremes implore us to be more mindful of the environmental challenges often associated with exploring new locations. You may know your own backyard environment like the “back of your hand,” but beyond that, there are likely to be some unknowns you’d be well-advised to learn more about, or steer clear of altogether. This also may hit home for many of the thousands of pilots that set off from all four corners of our country to get to aviation’s “Mecca,” or AirVenture, in Oshkosh, Wisconsin, in late July.

Westward Ho!

Although I’ve never (yet) had the chance to fly in to AirVenture, I can recall one of the first opportunities I had to travel beyond my aviation “comfort zone” during my private pilot training. I was to fly a solo cross-country to Fort Ticonderoga, New York (K4B6), an airport located in the heart of the Adirondacks

and nestled between two of New York’s most scenic lakes, Lake George and Lake Champlain. With most of my flight training taking place in the congested metropolitan New York City area, it was initially a shock to see so much open green space below me. Long Island’s vast — and flat — network of beaches, roads, and ubiquitous over-sized mall parking lots provided peace of mind that an emergency landing area was never far away. While flying into this vastly different frontier, complete with mountains and endless wilderness, I realized I had to be on my toes in case I had to set my Cessna 172 down sooner than planned. A little extra pre-flight planning proved helpful in ensuring an uneventful flight.

Although I’ve made several similarly successful flights, I’d be the first to admit that my aviation environmental expertise is fairly limited to the northeast quadrant of the United States. Planning a flight outside this area would require a greater level of scrutiny on my part to better understand the lay of the land. For example, before a flight into unfamiliar territory you might ask yourself:

- Is the area prone to any particular weather phenomena outside your normal experience?
- Are you familiar with all of that area’s topographical features and how they could affect your flight?
- Have you scoured the sectional(s) and taken note of all the minimum safe altitudes as well as remote areas? How about airspace types? Do you have a plan B at the ready? (A plan C and D wouldn’t hurt either.)
- Do you have survival gear/supplies appropriate for the area you are flying through or to?
- And, have you computed a risk factor that *honestly* reflects your personal minimum parameters?

Let’s have a look at a few flight scenarios in different areas of the country where we can address these questions and explore what mitigation strategies might be appropriate.

April Showers Bring May Flowers (and Tornadoes?)

Spring storms bring welcome relief to our plants and flowers, but they can also harbor one of nature’s most destructive forces — tornadoes. As you might have guessed given my “extreme” theme, the United States has more tornadoes than any other country in



Photo by H Dean Chamberlain

You may know your own backyard environment like the “back of your hand,” but beyond that, there are likely to be some unknowns you’d be well-advised to learn more about.

the world (about 1,200 per year). That's more than ten times the amount second place Canada receives! Our nation's unique geography is chiefly to blame for that. The lack of a major east-west mountain range means that there is nothing to impede warm, moist tropical air from colliding with the cool, dry arctic air over the mid-west states. Thanks to this phenomenon, the swath of land from Texas to the Dakotas has garnered the dubious nickname of "Tornado Alley."

Despite the deceptively cool temperatures of early spring, a pilot unfamiliar with this area would be well-advised to keep watch for tornados as well as their more common predecessor, thunderstorms. This is especially true for pilots whose experience with thunderstorms might be limited to the summer-afternoon-convection variety. It goes without saying that the best mitigation strategy here is to avoid tornados and thunderstorms at all costs.

A good way to avoid unwanted weather encounters is to familiarize yourself with the big picture of weather in a particular area weeks, or even months, before your trip. A regular review of frontal activity and weather reports (e.g., METARs, TAFs) will give you time to study the differences, as well as spot any weather trends or patterns, from the safety of your home. For example, a first-time flyer to the southeast in the summer may notice a recurring pattern of afternoon rain showers and thunderstorm activity. In this case, simply adjusting your arrival time to early morning or evening might help you bypass any delays or diversions.

Where is Everybody?

As I mentioned earlier, one of the options you may face on a long cross-country is flying over remote areas or large bodies of water (and, by the way, Lake Superior just happens to be the largest fresh-water lake in the world). While it might be more convenient to cut across these areas to save time and fuel, there may be better (and safer) options.

A good example would be a flight that involves transiting the Everglades in Florida. "A shortcut over the Everglades may not be the best option," comments Jeffrey Smith, a manager in the FAA's General Aviation and Commercial Division and former flight instructor in the Fort Lauderdale area. "Should something happen to you, there's little to no help available and emergency services may have a really hard time getting to your location." That's if the alligators don't get to you first, of course.

Whether it's transiting harsh or dangerous terrain, or large bodies of water, try to extend or alter your trip

legs to stay over land or at least within proximity of resources. "Daytime can be your friend in this type of situation," says Smith, adding that nighttime flight over dark terrain with no visual markers will only increase your risk. You'll also want to know what kind of radar coverage you'll have in these areas and if there are any gaps you can avoid.

If your flight plan does call for transiting a large body of water, be sure you have the proper safety equipment, to include life preservers and a signaling device, onboard. (See 14 CFR section 91.509 for more on overwater equipment requirements.) On the flip side, when transiting large expanses of hot and dry desert area, be sure you have plenty of food and especially water on hand in addition to your normal emergency kit. It could be a long wait before a rescue vehicle arrives.

Clear on Class

Depending on where home is, the closest thing to ATC interaction for some pilots might be making position broadcasts on your airport's UNICOM frequency. If you're a Class E or G cruiser heading out for a long trip, you'll want to pay special attention to your routing and plan any airspace encounters you may have that require radio communication and/or permission to enter. Also keep in mind the differences with cloud clearance limits, VFR visibility minimums, and transponder requirements. In a few high elevation areas of the country, Class G airspace goes all the way up to 14,500 feet mean sea level. However, once you're above 10,000 feet, visibility and cloud clearance requirements are the same as Class E airspace.

Finally, review any special use airspace areas you might encounter along the way. Mid-flight is not the time to figure out how to transit something like the Washington, D.C. Special Flight Rules Area. Make the Aeronautical Information Manual (AIM) your go-to resource for brushing up on airspace intricacies.

Hot, High, and Heavy

If you're a regular reader of this magazine, you may have noticed an emphasis on articles dealing with density altitude in the last few issues, and for good reason. It's an insidious danger that frequently catches pilots off guard, especially those unfamiliar to flying at higher altitudes. For example, at Colorado's Leadville Airport (the nation's highest at 9,927

Whether it's transiting harsh or dangerous terrain, or large bodies of water, try to extend or alter your trip legs to stay over land or at least within proximity of resources.

feet), on a 23°F standard day, a normally-aspirated engine can develop only 70-percent of its rated horsepower. That's like taking off at a cruise power setting. At 63°F at the same airport, density altitude would be about 12,500 feet, higher than many light single-engine aircraft's service ceiling!

"When it comes to environmental factors that can affect flying in the western and southwestern United States, density altitude is at the top of the list, hands down," says Mark Spencer, Public Lands Director and Arizona State Liaison of the Recreational Aviation Foundation (RAF).

A few tips Spencer recommends you keep in mind include keeping your aircraft at least 10-percent below maximum gross weight, flying when temperatures are cooler, and leaning your engine for peak take-off performance (consult POH). At airports along the front range of the Rockies from New Mexico to Wyoming, leaning for takeoff is in fact the only way to get the expected performance from a normally aspirated engine.

Remember that high density altitude is not just limited to the western U.S. Given the right conditions, its performance-robbing effects can be found at lower altitude airports in any area of the country. For more about the dangers of density altitude, see the article "Hot, High, and Heavy" in the March/April 2015 issue of *FAA Safety Briefing*.

In addition to density altitude, the western half of the United States is home to some landscape features that also deserve careful attention. In a span of just 800 miles, we go from the highest airport at nearly 10,000 feet to the lowest at -210 feet in Furnace

Creek, Calif. Around and in-between are some of the world's most beautiful mountains, valleys, canyons, and deserts. While awe-inspiring to view, each of these features has its

own unique set of dangers to pilots, from treacherous mountain waves to being lulled into a box canyon. If you're not used to flying in these areas, you'll need to invest in acquiring ground school time for sure. The FAA produces several good educational products that can get you started.


There's also some welcome news that may help provide hundreds more landing options in some of these remote areas. Memoranda of Understanding have recently been signed by both the U.S. Forest Service and the Bureau of Land Management to

help identify, and potentially open up several backcountry strips that have been closed for decades. A recent inventory revealed over 100 airstrips that exist on USFS lands alone. The RAF is currently working with land managers to chart the more heavily used airstrips and open previously closed airstrips where warranted. Pilots can also find information on airstrip locations by going to www.backcountrypilot.org or www.shortfield.com.

"Having these airstrips open provides extra planning and safety options for pilots," said Spencer, whose championing efforts helped implement the MOUs. Spencer personally lent a hand in helping to reopen Grapevine Airstrip in Arizona's Tonto National Forest; a gleaming example of a once shuttered airstrip brought back to life.

Make It Personal

An article on facing aviation challenges outside your home environment wouldn't be complete without mention of personal minimums. Every pilot should develop, abide by, and regularly reassess this set of flying criteria that helps determine whether, and under what conditions, to operate. Personal minimums act as a "safety buffer" between the demands of the situation and the extent of your skills, and are an essential part of any flight. For more on this topic, as well as a personal worksheet you can use to inventory your own skills and comfort levels with different scenarios, see the March/April 2015 issue of *FAA Safety Briefing*.

It would be pretty hard to cover every type of environmental challenge you could encounter in the United States, but hopefully this article will get you thinking about some of the extreme as well as garden-variety pitfalls you might encounter on a flight outside your home 'drome. With the right training, tools, and preparation, our beautiful nation is yours to explore. 

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

Personal minimums act as a "safety buffer" between the demands of the situation and the extent of your skills, and are an essential part of any flight.

Learn More

FAA Tips on Mountain Flying

www.faa.gov/regulations_policies/handbooks_manuals/aviation/media/tips_on_mountain_flying.pdf

ADS-B Safety Benefits In and Out of Your Normal Base of Operations

CLIFTON STROUD

When flying in familiar territory, we're comfortable with the airspace, the weather patterns, and the traffic patterns. But what do we know when flying out of our normal operating area?

With thousands of pilots planning unfamiliar flights to EAA AirVenture, the Oshkosh airshow in late July, it's a good time to review the benefits of both Automatic Dependent Surveillance – Broadcast (ADS-B) Out and In. For everyday flying and especially for this kind of trip, ADS-B provides a significant boost in safety and situational awareness for general aviation (GA) pilots.

Nearly 11,000 aircraft — most of them GA airplanes — are now equipped for ADS-B Out and more than 120 of the FAA's 230 air traffic control facilities are using ADS-B, in conjunction with radar, to separate traffic. ADS-B Out transmits aircraft location data to air traffic controllers and other aircraft equipped to receive it.

The GPS-based surveillance provided by ADS-B Out enhances the ability to perform life-saving search and rescue missions. Controllers tracking aircraft with ADS-B Out have more accurate information about the last reported position of your aircraft. ADS-B Out avionics transmit data about once every second — compared to radar, which is about 3-15 seconds. This reduces that critical window of time involved in a search and rescue operation. And in rugged mountainous terrain — where even a minor accident could have dire consequences — having ADS-B coverage could assist in a search and rescue. The smaller footprint of ADS-B ground stations means they can be placed where a radar site would not be possible.

Although only ADS-B Out is mandated by January 1, 2020, for aircraft flying in most controlled airspace — aircraft without electrical systems are excluded — there are also significant advantages to ADS-B In. With ADS-B In and Flight Information Service–Broadcast (FIS-B), a pilot gets unprecedented levels of situational awareness, which translates into significant safety benefits.

FIS-B provides pilots with graphical weather displays in the cockpit as well as text-based advisories including NOTAMs and significant weather activity. This includes temporary flight restrictions or closed runways. These advisory services are provided free of charge to the user. Another key benefit of ADS-B In is that terrain maps can easily be added to cockpit displays, which is especially helpful in unfamiliar airspace or low-visibility situations.

Pilots of ADS-B In-equipped aircraft will see what controllers now see — the position of surrounding aircraft together with graphical weather displays. This creates an environment of shared situational awareness and crucial see-and-avoid capability.

There are three types of traffic broadcasts:

- **Traffic Information Service-Broadcast (TIS-B):** This air traffic advisory service provides the altitude, ground track, speed and distance of aircraft flying in radar contact with controllers and within a 15-nautical-mile (nm) radius, up to 3,500 feet above or below the receiving aircraft's position. TIS-B enables pilots to see aircraft equipped with transponders flying nearby even if those aircraft are not equipped with ADS-B Out.
- **Airborne Data Exchange:** Aircraft equipped with ADS-B In can also receive position data directly from other aircraft broadcasting on the same ADS-B Out frequency.
- **Automatic Dependent Surveillance—Rebroadcast (ADS-R):** This takes position information received on the ground from Universal Access Transceiver (UAT)-equipped aircraft and rebroadcasts it on the 1090 megahertz (MHz) frequency. Likewise, ADS-R rebroadcasts 1090 MHz data to UAT users. In concert with TIS-B, airborne data exchange and ADS-R provide all ADS-B In-equipped aircraft with a comprehensive airspace and airport surface traffic picture. ADS-R delivers traffic data within a 15-nm radius 5,000 feet above or below relative to the receiving aircraft's position.

The FAA has also established standards for a new ADS-B In capability that will allow pilots to keep track of aircraft flying in front of them during a visual approach. The pilot will be able to monitor the aircraft ahead by looking at a cockpit display of its position based on data received through an ADS-B broadcast.

The FAA has urged operators to equip soon for ADS-B Out to avoid a last-minute crunch, given a limited number of qualified repair stations. Whether you equip now or later, consider adding ADS-B In as well. It can make unfamiliar airspace a lot more comfortable.

For more information on how to equip for ADS-B, access www.faa.gov/go/equipadsb.

Clifton Stroud is a contract writer/editor with Beacon Management Group. He supports the NextGen Performance and Outreach Division.



URGENT CARE



EMERGENCY!

Urgent Care for Your Aircraft

SABRINA WOODS

It is bad when you or one of your passengers gets sick while on your cross-country adventure. It just might be worse should your plane take ill. After all, you are likely to have insight as to what could be wrong with you. Moreover you have the capability of telling your treating physician it hurts “here.” But when that previously cheerful rattle suddenly grows ominously louder, when you struggle to lift the nose despite being fully trimmed up, or when that needle on the EGT gauge all of a sudden reads “tilt,” you’ve got problems. Your plane is sick.

But you’ve planned for this in your “plan B,” right? So you calmly engage in emergency actions, notify air traffic control what is happening, and land the aircraft as quickly and as safely as possible. Now what? You need urgent care for your aircraft.

Preparation is Your Best Defense

The best offense is a good defense. This commonly used adage is applied to everything, from sports to warfare, and it works for cross-country flight prep as well. A good way to build your defense is, prior to starting out on your adventure, have your A&P do a quick check out of your aircraft a week or so before you leave. In particular if your bird hasn’t

been flown in a while, or has only flown for very short trips prior to the transcontinental one. Things you and your technician will want to look over are: verifying time compliance inspection due dates (so they won’t be overflown); cleaning spark plugs; IFR/pitot checks (even if you plan on flying VFR); making sure gauges and lights are operational; servicing tires, brakes and struts as needed; checking and topping off fluids; and completing flight control checks.

If there have been any major overhauls or repairs recently, you might want to get in a local flight before heading out cross-country to make sure everything is in working order. All of this followed up by a good wash-down and vacuum can go a long way into ensuring nothing unexpected pops up later.

If you rent an aircraft, make sure you review the records to ensure all maintenance checks are up-to-date and to familiarize yourself with what has been done recently. This includes checking for a current annual for the airframe, engine(s) and propeller(s), as well as current entries for the pitot-static system, transponder, and emergency locator transmitter. You’ll want to read over what the last few maintenance “squawks” were and what was done about them. Last, you’ll want to ensure that any active ADs

on the aircraft have been complied with. Ask questions about the things you might be unsure of. It is also a good idea to arrange all of this with your rental FBO beforehand, just in case maintenance logs are kept in a different facility (along with the technician).

After reviewing the records, discuss with the rental facility what their protocols are should you have a problem while away. In some cases and in particular if the issue grounds the aircraft, the owner will want you to simply leave it where it is while they take care of recovery efforts. In those cases, make sure you take into consideration how you intend to keep on traveling in that plan B of yours.

For a personally owned aircraft, prior to your in-depth walk-around (that one where you do much more than make sure nothing has fallen off since the last time you flew her ...) and as a part of the flight planning process, you should compile a list of qualified, competent maintenance technicians along your route that could see to your aircraft's needs should you require it. An Internet search can probably do wonders to start you on your way, but rolling in the help of your home-based aviation buddies is always a great idea as well. Word-of-mouth is a powerful tool and your fellow "been there, done that" aviators and technicians can give you recommendations as to who they know might best suit your needs. Once armed with that ammunition, follow up by doing a telephone consult with each to make sure they are familiar and certificated to work on your make and model. This might seem like a lot of upfront work but if it is a route you plan to do often, you likely only have to do it once. Besides, having vital information such as this is like having a fire extinguisher. For the most part it is just there; but when you need it, you *really* need it.

Next, while maintaining airworthiness certificates on board is mandatory, it is also a good idea to pack in pertinent aircraft manuals and a copy (and I mean copy) of your maintenance logs to get started troubleshooting when you are away from home. It also doesn't hurt to carry a few smaller items along to help your cause. Some suggestions are a small tool kit (ratchet set, pliers, multi-tool, etc.) and hardware set (safety wire, nuts, connectors, etc.), extra oil and hydraulic fluid, spark plugs, bulbs, fuses, and a spare tire tube, to name a few.

Fly the Airplane

Despite your best intentions and precautions, let's say the worst happens and you end up with a

maintenance issue far from home. First and foremost: Fly the airplane. If there are non-pilot passengers on board, make it clear that sterile cockpit rules prevail. If there is another aviator with you sharing flying duties, immediately

identify (if you haven't done so previously) who is the PIC controlling the aircraft while the other pilot runs checklists and notifies air traffic control of the situation.

If you have already been in contact with ATC, stay on that same frequency. Otherwise switch to the distress frequency, 121.5. Likewise with your transponder code — if already assigned, don't change it unless your controller advises it. If not on a discrete transponder code, switching to emergency code 7700 will alert ATC that something is amiss.

Make sure you review the records to ensure all maintenance checks are up-to-date, and to familiarize yourself with what has been done recently.

Photo by Tom Hoffmann



When planning a flight, make a list of qualified, competent maintenance technicians along your route that could help in a pinch.

Declaring an emergency is viewed with reluctance in some flying circles, but doing so will give ATC the most effective means of assisting you, with services such as the most direct vectors and clearing the airspace to give you room to work. It will also ensure that appropriate first responders will be notified so they can be there to support you when you land.

If things just aren't going your way and you end up having to land in Farmer John's field, you need to contact the local authorities as soon as possible even if you declared an emergency. You will want

This might seem like a lot of upfront work, but having vital information is like having a fire extinguisher. For the most part it is just there; but when you need it, you *really* need it.

to pass along any information that can help them locate you. After the authorities, contact Flight Service to update your flight plan, the local

FSDO to notify them of the situation (in particular if you, your passengers or your aircraft incurred any damage), and the closest FBO to arrange for aircraft transport once it has been released for service. Then call your mom/spouse/children/best buddy Pat to let them know about your situation. They worry.

After that it is time to ring up one of those technicians you sourced before you started on your adventure, as well as your usual A&P so you all can get to work on diagnosing your issue.

Tell the Doctor Where It Hurts

Determining and fixing what is ailing your bird is sometimes as simple as righting the damage you took after a chance encounter with a migrating flock. And sometimes the issue is much more elusive, such as when the exhaust gas temperature is reading ridiculously high. There are a host of reasons that could cause high EGT but if you track your engine diagnostics via a service or an application, that data can go a long way toward helping you figure out what is wrong.

You are the other main source of information. Everything you have done: all of the inputs you have made and how the aircraft reacted to each — right up until the issue commenced — is vital for troubleshooting. That information is also perishable, so try to relay it to a technician as soon as possible. If time or aftermath of the incident does not permit immediate discussion, make a few notes to keep your thoughts fresh for when it is finally time to sit and chat with the "doctor." Together, you can make sure your aircraft gets the urgent care it needs and you are back to your cross country adventure in no time. ✈️

Sabrina Woods is an associate editor for FAA Safety Briefing. She spent 12 years as an aircraft maintenance officer and an aviation mishap investigator in the Air Force.

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Learning How to Go Places

High on the list of benefits from learning to fly is the ability to exercise the privileges of your pilot certificate to go places — to lift off, point the compass at some other part of the country, and explore locales inaccessible or impractical to reach by car.

For this reason, the knowledge and skills needed for cross-country flying have always been an integral part of the pilot certification process. You'll find the required subject areas for each certificate and rating listed in 14 CFR part 61, along with aeronautical experience requirements. The Practical Test Standards (PTS) include skill tasks specific to cross-country flying along with performance metrics for each one.

The presentation of this material is getting significantly better. Based on recommendations and a great deal of hard work by a diverse group of aviation industry experts, the FAA is building the foundation for transition from today's skill-focused PTS to the integrated Airman Certification Standards (ACS) format.

You can read about the ACS in detail by visiting the FAA Airman Testing and Training web page, but here's the bottom line: The ACS enhances the PTS by adding the specific elements of aeronautical knowledge and risk management needed to support each Area of Operation/Task.

In this issue's "Jumpseat" department, John Duncan talks about the need to prepare the people, the plane, and the plan for GA cross-country travel. Here's how the ACS framework integrates the knowledge, flying skills, and risk management abilities to improve pilot training and testing in these three areas.

People (Pilot)

As in the PTS, Preflight Preparation is the first Area of Operation (AOO) in the private pilot airplane ACS. Two of the tasks in this AOO are specific to the pilot. The first ACS task is Pilot Qualifications, a more focused presentation of pilot-related material in the PTS Certificates and Documents task. Its objective is "to determine that the applicant exhibits satisfactory knowledge, skills, and risk management associated with airman and medical certificates including privileges, limitations, currency, and operating as pilot-in-command (PIC) as a private pilot." In the risk management section of this task,

you'll find topics such as distinguishing currency from proficiency, setting personal minimums, and maintaining fitness to fly.

The second pilot-related task is Human Factors. The elements of this task are designed to "determine that the applicant exhibits satisfactory knowledge, skills, and risk management associated with personal health, flight physiology, and aeromedical and human factors, as it relates to safety of flight."

Plane

Still in the Preflight Preparation AOO, the ACS has three tasks associated with preparing the plane: Airworthiness Requirements, Performance and Limitations, and Operation of Systems. A key cross-country related knowledge task element in Performance and Limitations is understanding of "elements related to performance and limitations (takeoff and landing, crosswind, tailwind and headwind, density altitude, glide performance, weight and balance, climb, cruise, descent, powerplant considerations) by explaining the use of charts, tables, and data to determine performance." A risk management element in the same task requires evaluation of "published aircraft performance data as it relates to expected performance."

Plan

The remaining tasks in the ACS Preflight Preparation AOO concern the plan. These include Weather Information, Cross-Country Flight Planning, and National Airspace System (NAS). Elements in the NAS task include the ability to "determine the requirements for flying in particular classes of airspace," and to "properly identify airspace and operate accordingly with regards to communication and equipment requirements." In another example, the Weather task requires the ability to "correlate available weather information to make a competent go/no-go or diversion decision."

To get a sense of how the ACS will promote better preparation for cross-country flying, visit the Airman Testing web page at www.faa.gov/training_testing/testing.

Susan Parson (susan.parson@faa.gov, or @aviBrix for Twitter fans) is editor of FAA Safety Briefing. She is an active general aviation pilot and flight instructor.



Taking Care of Yourself on the “Road”

SABRINA WOODS

Flight Planning and Healthcare Tips for Cross-country Flying

Back in 2013 at this same time of year I penned an article for *FAA Safety Briefing* called “What Would MacGyver Do?” It was in our “Be Prepared” themed edition (www.faa.gov/news/safety_briefing/2013/media/JulAug2013.pdf) — and little did I know at the time how much that article would resonate with you, our readers.

So for this summertime edition of the magazine I have decided to knock off a bit of the dust from that premise and expand on it to give you some tips and insights into ensuring your summer flying is foot-loose and urgent-care free.

Make a Plan, Stick to the Plan

While in the military, I had a commander whose saying so truly encapsulated my entire way of thinking that I made it my own personal mantra. It is the path by which I walk my life: “Make a plan, stick to the plan.”

Now wait! Before you go and accuse me of being inflexible, a good plan has a little contingency built in just in case. Meaning — a good plan has a plan “B,” “C,” and possibly a “C+,” to take into account when little things like weather, engine anomalies, Canada geese, and air traffic wreak havoc on your perfect flying day.

The following are some tips that I have compiled to incorporate into your planning process.

First, when headed cross-country, pick checkpoints you know you can find, and familiarize

yourself with the airports you are headed to. Review the airport hours of operation, diagrams, and any Notices to Airmen (NOTAMs). It never hurts to check in with that FBO to see if anything has changed since the last time you were there that might not have made it to the notice (like the giant pothole that just opened up at the intersection of taxiway Bravo and runway 09). Carefully scrutinize the weather at all points along your route. With all the latest weather forecasting technologies mere tablet taps away, and the wonderful professionals at Flight Service within phone call reach, there is no excuse for not being equipped with the most up-to-date weather before starting your journey.

One of my favorite parts of that MacGyver article was the section titled “MacGyver Gets Rescued” because who doesn’t like a happy ending? The thing is though, the character MacGyver did a lot to invest in his own happy endings. As I wrote back then; “The whole point of surviving is to get rescued and get back home. Whether you choose low-tech or the higher end of the stuff to outfit your survival gear, the best chance of getting back home is by giving search and rescue personnel an idea of where to start.”

This is still very much true. Receiving a weather briefing notwithstanding, filing a flight plan affords you the wonderful opportunity to thoroughly research your intentions. Plotting your plan forces your attention on key, potentially risk-mitigating cal-

culations that might otherwise be overlooked. These calculations include fuel burn rates, prevailing winds, and expected time to destination, for example.

I can't express this enough: a good plan has a backup plan so when you are sorting out your path, make sure you take into account where you would go should the going get rough. Determine exactly how long you are willing to stay airborne when that vicious head-wind determinedly works against you. Work out what you would do should you be forced to initiate a go-around or if that \$100 hamburger suddenly decides not to agree with you (more on that later). Being "in the thick" is no time to quickly have to mentally reconnoiter.

And last, yes, a filed plan is also your insurance that someone will come looking for you should you not show up at the destination when you said you would. Jim Viola, Division Manager for FAA's General Aviation and Commercial Division appeals to GA pilots to file for VFR flight plans as much as possible if only for the flight following aspect. "Someone should know where you were going to fly — let us know where to start looking if you didn't make it to your planned destination."

It is disconcerting that many of the pilots involved in mishaps last year did not file a flight plan prior to their mishap flight.

Pack Smart

As our theme highlights, people fly in all four corners of the United States. You can imagine that

flight dynamics differ a bit between the skies of wild and rural Alaska, and the hot, moisture-soaked air of the Mississippi Delta. Besides seeing to that flight plan, flight preparation should consist of smart

packing. And by that I mean packing for the en route climate *and* the one at your destination. That former part is the one that tends to catch people

the most unprepared. Whereas I fully recognize that when heading to Daytona Beach to escape the cold, one might be more focused on packing swim suits, flip flops, and beach umbrellas, I also know that it is highly unlikely any of these things would serve much good should the flight have to divert to the rural farmlands just outside of Boston — which, incidentally, just experienced its worst winter in history.

In the "MacGyver Carries a Pocket Knife" section of the other article, I mentioned an assortment of things you might want to carry based on locale: sunscreen, sunglasses, and a hat for sunny, arid climates; down parkas, gloves, and thermals for cold weather climes; mosquito netting and bug spray for heavy vegetation; and life vests for areas with a lot of standing or swift-moving water, to name a few.

In addition to the region-specific items, there are some staples you should keep onboard. A small supply of non-perishable food and plenty of water for everyone on board to last for at least three days

I can't express this enough: a good plan has a "plan B," so when you are sorting out your path, make sure you take into account where you would go should the going get rough.



Flight planning goes beyond simply filling out a flight plan.

is a good start. Some sort of waterproof fire-making device, a sturdy multi-tool, a first aid kit, and a locator device round out the list nicely.

Proactive Health

The Centers for Disease Control and Prevention inform us to “be proactive, prepared, and protected

It isn't a good idea to try out that new “Three Mile Island” burger at the local shake shop — complete with twice-fried jalapeños and sriracha mayo — in the short hours before you go fly.

when it comes to your health while you are traveling.” This is good advice for everyone, regardless of the mode of transportation used to get to your destination. Good preparation for ensuring

you stay healthy during your travels includes making sure you are healthy *before* you travel.

Woke up with that tickle in the back of your throat? Maybe today is not the day to fly — at least not until it has passed or until you get it checked out. The last thing you need to deal with is a bout of congestion at 6,000 feet.

It also isn't a good idea to try out that new “Three Mile Island” burger at the local shake shop — complete with twice-fried jalapeños and sriracha mayo — in the short hours before you go fly. Sensible, balanced meals and remaining hydrated are an essential part of flight preparation. “Gut bombs” are probably not.

Ensure your vaccinations and allergy medicines are up-to-date prior to stepping out to your parking patch. Pack a medical kit for yourself and

for any passengers flying with you. Make sure you pack enough of any medications you need, or take a prescription so it can be refilled easily in case you land at “someplace other than expected.” If you end up not feeling well during a flight, DO NOT HESITATE to hail your nearest air traffic controller and let him/her know what is going on with you. There is absolutely no reason to be flying out there sick and “alone.” Let ATC help when things aren't going as planned. This holds true for lost vectors and airworthiness issues as well.

Should you have to make that emergency landing, it is a good idea to bring an insurance card and any additional records (i.e., medical alert pendants/bracelets) that will help medical services quickly determine any extenuating circumstances you might have. This can be anything from an allergy to penicillin or latex, to having metal implants or a pace-maker.

Last, if you wear corrective lenses, a spare pair of glasses or contacts can always come in handy. Have a small reserve of ready cash, too. You'd be surprised just how many rural FBOs don't take American Express.

Postflight

Once you have reached your destination, take a few minutes to review your data and make comparisons against what you estimated before you started on your journey. This includes actual fuel burn rate, oil consumption, groundspeed, airspeed, time to destination, etc. This information can be helpful in future flight planning and can also give you some valuable insight as to how your plane is performing. Then it's time to button 'er up (you packed in those tie-down ropes, right?), log your time, and close out your flight plan — the latter being a crucial step in alerting Flight Service that you are down safe and sound.

One last quote from the MacGyver article (slightly refined) drives my point home: “While you might not be a multi-lingual, globetrotting, physicist/engineer; with a good attitude, some training, a little preparedness, and a few specialty pieces of equipment...” you can make sure your next cross-country trip sticks to the plan. ✈️

Sabrina Woods is an associate editor for FAA Safety Briefing. She spent 12 years as an aircraft maintenance officer and an aviation mishap investigator in the Air Force.



Diet can be something to consider when you're traveling.

Need ADS-B?

Get Answers...



www.faa.gov/go/equipADSB



Next**GEN**



Top 2015 General Aviation Professionals Named

The General Aviation Awards Program — started in 1963 — is a cooperative effort between the FAA and approximately 38 GA industry partners. Each year it recognizes aviation professionals for their contributions in the fields of aviation, education, and flight safety. Applicants are evaluated against at least four required metrics: professional involvement, *pro bono* service to the aviation community, continuing education, and the strength of three letters of recommendation.

“These awards highlight the important role played by these individuals in promoting aviation education and flight safety,” said Arlynn McMahon, GA Awards Program board chairwoman. “The awards program sponsors are pleased that these outstanding aviation professionals will receive the recognition they so richly deserve before their peers in Oshkosh.”

The national winners are officially recognized during EAA AirVenture each year in July, which includes an all-expenses-paid trip to the world’s greatest aviation celebration in Oshkosh, Wisconsin. For more information, go to www.generalaviationawards.org.

Certificated Flight Instructor (CFI) of the Year

Mary A. Schu

Tualatin, Oregon



Mary has been an active flight instructor since 1977 with more than 20,000 hours of flight time logged, including more than 14,000 hours of instruction given. She holds airline transport pilot (ATP) and CFI certi-

icates for airplane single and multiengine land and instrument, and is type-rated in the Cessna *Citation* 500. She is a designated pilot examiner (DPE) for private, commercial, instrument, ATP, and flight instructor check rides in single and multiengine airplanes.

Mary currently owns and operates *Mary A. Schu Aviation*, which provides DPE services and free-lance flight instruction in the Portland area and approximately five flight instructor refresher courses (FIRC)s each year. She also operates *Mary A. Schu Consulting*, which provides program support for business, government, and educational entities that are developing or adding aviation programs.

Mary is also the FAASTeam lead representative for the Portland-Hillsboro flight standards district office (FSDO), where she provides numerous presentations and safety seminars. She is one of 31 industry leaders to serve on the FAA Aviation Rulemaking Advisory Committee Airman Certification System Working Group to assist the FAA in developing new airman certification standards.

Aviation Maintenance Technician (AMT) of the Year

Donald D. Streitenberger, Jr.

Cincinnati, Ohio



Don is the chief inspector for The Kroger Company’s business jet fleet based at Cincinnati Lunken Airport. He started working for Kroger as a line mechanic nearly 30 years ago

and has been chief inspector there for more than 11 years. He holds FAA certificates as a repairman and a mechanic with airframe and powerplant ratings and inspection authorization (A&P/IA).

Don has served on the board of directors of the Ohio Aircraft Technicians Society (OATS), the Cincinnati chapter of the Professional Aviation Maintenance Association (PAMA). During that time, he has facilitated and taught numerous OATS-sponsored IA renewal seminars at Cincinnati State Technical College and is deeply involved in helping to put on the annual Lunken Airport Days Aviation

Career Fair. He has also been involved in the local Boy Scout Aviation Merit Badge program, served as ramp boss for Lunken's annual airshow, and been a FAASTeam representative.

Don is the recipient of seven FAA maintenance technician awards (six silver and one gold), the

National Business Aviation Association (NBAA) 24-Year Maintenance Technician Safety Award, and has received certificates of appreciation for his *pro-bono* work for the aviation maintenance community from PAMA, OATS, and FAA every year since 2007.

Avionics Technician of the Year

Rickey D. Hestilow

Arlington, Texas



Rick has had a widely varied, more than 40-year career in the aviation maintenance field. For the past decade his primary focus has been on achieving professional recognition and certification

of aircraft electronic technicians (AETs). This phase of Rick's career began when he drafted several grant requests submitted to the National Science Foundation, which resulted in \$1.3 million in funding for the National Center for Aerospace & Transportation Technologies (NCATT).

He currently serves as the NCATT program director, director of standards and certification, and

director of accreditation. In these roles, he helped develop industry standards for avionics technicians, developed education and training curriculum for avionics and aircraft electronics technicians, and created a testing program for certification of AETs. Most recently, he has been working on the development of certification standards for technicians working on unmanned aircraft systems.

Prior to his involvement with NCATT, Rick's aviation maintenance career included more than 30 years as an A&P/IA, a designated mechanic examiner (DME), a designated airworthiness representative (DAR), a director of maintenance for multiple part 145 repair stations, owner/operator of three fixed base operators (FBOs) that provided maintenance services, and an instructor at a part 147 AMT school. He is also the holder of six supplementary type certificates (STCs), and he has a long association with Tarrant County College in Fort Worth, Texas, where he has taught numerous courses in aeronautical technology and served as coordinator of special projects.

FAA Safety Team (FAASTeam) Representative of the Year

Christopher J. Hope

Kansas City, Missouri



Chris first volunteered as an FAA aviation safety counselor more than 10 years ago. When that program morphed into the FAA Safety Team in 2009, Chris became a FAASTeam representative. As

stated by his FAASTeam program manager, Chris has been one of the most active and most self-motivated representatives in the Kansas City area. During the past 12 months he has conducted 11 safety seminars. He also founded the Kansas City IMC Club in 2013,

which meets monthly to discuss real-life issues of instrument flying.

Chris holds ATP, CFI, and ground instructor (GI) certificates. He is a Gold Seal CFI and Master Instructor. Chris has also been a volunteer pilot for the EAA Young Eagles program and Angel Flight, and currently serves as chairman of the Angel Flight Central Safety Committee.

Chris graduated from the U.S. Air Force Academy with a bachelor's degree in civil engineering and later trained to be a C-141 pilot for the Military Airlift Command out of McChord AFB. He returned to the Air Force Academy as a flight instructor followed by a career as a civil engineer and a free-lance flight instructor. In 1997, he became involved in the KCN Flying Club, which is now the Kansas City Flying Club, where he has served as manager and president. He currently serves as their chief flight instructor.



Alphabet Soup!

Taking care of your aircraft is just as essential to a sound safety management system as meticulous flight planning and continuing education. We are dedicated to keeping trending airworthiness topics, issues, and safety awareness programs at the forefront via the “Nuts, Bolts, and Electrons” department of *FAA Safety Briefing*. One of the ways we do that is by highlighting pertinent SAIBs, ADs, SDRs, and SEs. If you are unsure of what this alphabet soup means, read on!

Special Airworthiness Information Bulletins

A Special Airworthiness Information Bulletin (SAIB) is an informational tool that alerts, educates, and makes recommendations to the aviation community. Recent and archived SAIBs can be found here: <http://go.usa.gov/3BACJ>.

These bulletins contain non-regulatory information and guidance on maintenance issues that don’t quite meet the criteria for an Airworthiness Directive (AD). These can include process changes, identified errors, new findings, etc. Because these issues aren’t yet considered an unsafe condition, the intent is to inform owners, operators, and technicians so they can get their aircraft checked out before “something small” turns into a “major issue.” We will continue to highlight them in the magazine and in our biweekly FAAST Blast.

Airworthiness Directives

The FAA issues ADs when there is an unsafe condition in an aircraft, engine, propeller, or appliance. ADs are often the direct result of Service Difficulty Reports (SDRs) or findings from accident investigation boards. ADs notify aircraft owners and operators of potentially unsafe conditions and prescribe corrective actions such as special inspections, repairs, and/or alterations.

Unlike the SAIB, it is mandatory for an aircraft owner or operator to comply with the instructions outlined in an AD, typically within a prescribed timeframe. If not complied with, the aircraft is no longer airworthy.

The FAA issues ADs via three different processes: a notice of proposed rulemaking followed by a final rule; a final rule with request for comments; and an emergency airworthiness directive which is issued without any time allotted for comments. The latter is only used when “an unsafe condition exists that

requires immediate action by an owner/operator” and “to rapidly correct an urgent safety of flight situation.” Follow the directions of the EAD and consult with your A&P (or manufacturer). Current and archived ADs can be found here: <http://go.usa.gov/3BArB>. You can also sign up to receive SAIB and ADs here: <https://service.govdelivery.com/accounts/USFAARGL/subscriber/new>.

Service Difficulty Reports

Wondering how that “something isn’t right” information is collected and reviewed by manufacturers, analysts, and regulators? That process often starts with you.

An SDR is created when an owner or operator of an aircraft has a maintenance incident. If the issue is severe enough to result in a trip to a repair facility — meaning the problem is a certain failure, malfunction, or defect — the facility then has 96 hours to report it to the FAA via the SDR (Form 8070-1). The program’s objective is to identify conditions that adversely affect airworthiness by consolidating and analyzing data, and then alerting the flying public to any trends. An SDR can turn into an AD given the right circumstances. The SDR database is available at <http://av-info.faa.gov/sdrx/Query.aspx>.

Airworthiness Specific Safety Enhancements

The General Aviation Joint Steering Committee (GAJSC) — an industry and government initiative — has developed and implemented risk mitigation strategies in order to reduce fatal GA accidents. The team has developed a series of safety enhancement topics as part of safety outreach. Some airworthiness topics that we look forward to presenting include transitioning from steam gauges, turbocharger failure, and enhanced preflight checks after maintenance.

To stay plugged in to these and other safety topics, as well as education and seminar opportunities, you can sign up to receive messages via our safety program airmen notification systems, aka, SPANS. Check it out here: www.faaafety.gov/SPANS/default.aspx.

Whether you are an operator or a technician (or both!), the *FAA Safety Briefing* is your source for GA safety information. Our goal is to ensure every issue is packed with great tips, safety strategies, and advice so you will have the best possible tools to make sound aviation decisions.



Angle of Attack

TOM HOFFMANN

Knowledge is Power But Not Always Wisdom

"The great aim of education is not knowledge, but action." — Herbert Spencer

As an avid reader of AOPA's *Flight Training* magazine, I always find myself skipping ahead to the pilot quiz section to put my aviation knowledge to the test. To my relief, I typically miss only one question here and there. However, in a more recent issue, I was startled to see my quiz score take a bit of a nosedive. Yikes. Being a bit of a perfectionist, and with my aviation ego now somewhat bruised, I quickly took to the books to brush up on the area that tripped me up.

The experience served as an excellent reminder and validator of the "good pilots/mechanics are always learning" mantra that instructors continually try to impress on their students. As airmen, our responsibility is to make sure our aviation knowledge base is refreshed, renewed, and topped off regularly, especially given the industry's penchant for change. *Scientia potentia est* (knowledge is power), right? Well, to paraphrase another sage saying, knowledge is pretty meaningless if you don't apply it and/or share it. It is incumbent on us then to put what we learn into practice in the cockpit or on the shop floor — and share it with our fellow airmen.

If you haven't already taken notice of the Safety Enhancement topics we've highlighted over the past couple of years in the magazine and on our web page (www.faa.gov/news/safety_briefing), I encourage you to do so. These topics are the direct result of detailed analysis from general aviation accident data and highlight the leading causal factors for accidents. In addition to facts, figures, and important background information, these topics also include practical tips and advice you can use to incorporate this knowledge into action.

For example, last May we posted information about aircraft performance found here: (www.faa.gov/news/safety_briefing/2015/media/SE_Topic_15-05.pdf). The bulletin included tips on how to fine tune your landing and takeoff calculations as well as how to more realistically assess the performance capabilities of your aircraft. We complemented and expanded on this topic in the Aircraft Performance (May/June 2015) issue of *FAA Safety Briefing*. The topics for July and August are, respectively, manag-

ing unexpected events and flight risk analysis tools, two areas that can have a major impact on improving aviation safety.

You may also see these topics covered by FAA Safety Team (FAASTeam) representatives at local safety seminars as well as the educational outreach arms of organizations like AOPA, General Aviation Manufacturers Association, NTSB, etc. In fact, the NTSB regularly posts new Safety Alerts on its website (www.ntsb.gov/safety/safety-alerts).

These cover trending GA safety topics identified in recent accident investigations. Two of the more recent NTSB Safety Alerts, which will also be Safety Enhancement focus areas in 2016, include performing a more advanced preflight after maintenance (SA-041) and transition training (SA-040). There is also a new Safety Alert aimed at mechanics that discusses flight control and trim system rigging issues (SA-042) along with a sobering video featuring pilots who experienced a reversed trim system in-flight.

The NTSB Safety Alerts provide general guidance on how to apply the lessons learned from each accident and where pilots and mechanics can find free educational resources to learn more about prevention strategies.

These resources provide an excellent means for pilots and mechanics to expand their knowledge base on important safety topics, and at the same time, help provide practical applications of these important lessons to take with them while flying or maintaining.

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



Fatal Distraction

How Easily Pilot Attention is Lured Away

Managing distractions is critical to aviation safety. That's especially true for rotorcraft pilots, who routinely deal with many unique challenges that offer little room for error. With state-of-the-art avionics, sophisticated alert systems, and other attention grabbers finding their way into cockpits, flight crews must be vigilant in keeping their attention on what matters most — aircraft control. While certain distractions reveal themselves sequentially, others demand attention simultaneously and can easily disrupt the entire operation.

The ability to inhibit unwanted distractions while attending to a primary flying task is critical. That's why the FAA and safety experts with the United States Helicopter Safety Team (www.USHST.org) continue to advocate best practices for helping pilots effectively manage distractions. Let's look at what causes some of these distractions, along with some effective coping strategies you can use on your next flight.

Tunnel Vision

Tunnel vision (fixation) often translates into degraded pilot performance. Situations that demand the pilot's attention for prolonged periods of time will often have an adverse effect on other aspects of flight. While some situations require more focused attention on a particular area or task, others require pilots to divide their attention among several different actions. As these scenarios play out, it is often difficult to prioritize effectively, especially when things get busy.

Auditory distractions often cause the most harmful impact on pilots, because they can capture attention for long periods of time. Pilots are more likely to attend to auditory distractions because of the amount of attention required to capture, process, and respond to such events. Flight alert systems such as Enhanced Ground Proximity Warning Systems (EGPWS) use digitized voice commands to capture attention, causing pilots to respond more rapidly. "Whoop- Whoop- TERRAIN, TERRAIN - PULL UP."

We Interrupt This Message

So how do we best define distractions in aviation? Distraction means: to draw apart; to turn aside; to draw or direct to a different object or in different directions at the same time; or to stir up or confuse

with conflicting emotions or motives. In other words, a pilot must be preoccupied with an ongoing task in order to be distracted.

The question of why one event in the cockpit stimulates a pilot's attention over another causes many people to scratch their heads. Generally speaking, humans are only able to perform two tasks concurrently in limited situations, even if they are skillful when each task is performed separately. A pilot may be exceptionally skilled at programming the Flight Management System (FMS) and at maintaining situational awareness, but while that same pilot is conducting one of these events, the preciseness of the second suffers. Unfortunately, something has to give.

The challenge for helicopter pilots is to schedule their activities in a way that ensures safety critical tasks remain their top priority. Throughout training, pilots are constantly reminded to aviate, navigate, and communicate, in that order. This common prioritization schedule is often emphasized as a defense mechanism to cue pilots away from non-essential activities.

Heads Up

Some basic procedures for mitigating distractions include: develop standard operating procedures (SOPs), follow checklist procedures, and ensure positive aircraft control. If a task cannot be completed without interruption, give it extra time and patience. Tune out unwanted distractions by maintaining your full attention to the task at hand.

Dr. Steve Sparks is an Aviation Safety Inspector with the General Aviation and Commercial Division specializing in human factors and educational outreach initiatives. He is a certified flight instructor and is the coordinator for the US Helicopter Safety Team (USHST).

Learn More

NTSB Safety Brochure on How to Disconnect from Deadly Distractions

www.nts.gov/safety/mwvl/Documents/MWL_2015_Factsheet_01.pdf



Flight Forum

Mon Dieu!

Several readers have been interested to learn that “vitesse” is the accurate meaning of the “V” in V-speeds. We want to credit Geoff McKay, editor at LearnToFly.ca, for this observation. There are in fact a number of French words in aviation, and author/educator Rich Stowell even teaches a “French Class” to explain the various parts of an airplane with French names. As Rich observes, “the Wright Brothers invented the airplane, but the French got to name the parts!”

Feeling Fatigued

In the March/April 2015 edition of FAA Safety Briefing, the photo caption on page 15 indicates that the auxiliary pump is cracked with a popped rivet when it is actually the wing spar, skin and spar doubler that is adjacent to the auxiliary pump. We apologize for any confusion this might have caused.

Blast It!

How do I go about getting the bi-monthly FAAST Blast sent to my email account?

— Tom

The FAAST Blast is a great way to stay informed about all of the latest safety trends, concerns, regulations, and medical issues that affect the flying community. In order to receive the FAAST Blast messages you need to sign up for an account in FAASafety.gov and select the option stating that you want to receive messages on general aviation safety. Once you're enrolled, you should receive messages and notices on upcoming seminars as well. Hope that helps!

Big Dog Still Learning New Tricks

Dear FAAST & FAA Folks, after 9300+ hours as a PIC, 600+ airshow demos in fast jets, w/Commercial/Single/Multi/IFR/LOAA T-33-F-86 series, I still very much appreciate and enjoy your ongoing efforts at making me a better pilot. Throughout my aviation career (1972-current) I have been blessed by being mentored and knowing many people from the FAA (especially the Columbia FSDO folks). With a few exceptions, these people have always tried to help me further my safety and flying ability as a pilot.

Now, as I reflect back on it all after 42 years, I cannot thank you enough for your untiring quiet professionalism, and I look forward to more good years yet to come. Thank you, thank you for doing what you do every day, you made a real difference in

helping me to become a better aviator. Your efforts have made all the difference in my safe flying journey from the green “new guy” to an Old Pelican.

— BD

Thank you for your email. We greatly appreciate the kind words. We are also glad to hear that you find value in our safety outreach products and that they have made a difference for you during your flying career. The FAA Safety Briefing staff — as well as the entire FAASTeam — work very hard to help educate airmen, whether with articles, live presentations, or web content. We look forward to continuing this educational endeavor and to helping to improve aviation safety.

The Missing Link

I read your articles and share with my office personnel pertinent information with respect to their job. I was trying to click on the links at the bottom of the article and landed on a “cannot be displayed” screen. The specific link is www.faa.gov/air_traffic/publications/ATpubs/AIM/. I don't believe it is my connection. I have tried on both a windows machine and a MAC. I have to believe that the flying public is also getting such screens. I'm letting you know so that the links can be fixed.

Thank you for the work you do.

— Michael

Thanks for the information. It appears the link was updated in January with a new edition of the AIM (and after our issue was at the printer). The Special Use Airspace section (Chapter 3, Section 4) can be found here instead:

http://www.faa.gov/air_traffic/publications/media/aim_w_chgs_1-2_dtd_1-8-15.pdf. We apologize for the confusion.

Let us hear from you — comments, suggestions, and questions: email SafetyBriefing@faa.gov or use a smartphone QR reader to go “VFR-direct” to our mailbox.



FAA Safety Briefing welcomes comments. We may edit letters for style and/or length. If we have more than one letter on a topic, we will select a representative letter to publish. Because of publishing schedule, responses may not appear for several issues. While we do not print anonymous letters, we will withhold names or send personal replies upon request. If you have a concern with an immediate FAA operational issue, contact your local Flight Standards District Office or air traffic facility. Send letters to: Editor, *FAA Safety Briefing*, AFS-850, 800 Independence Avenue, SW, Washington, DC 20591, or email SafetyBriefing@faa.gov.

Making the Most of It

Over the years, I've been fortunate to do several lengthy cross-country flights in GA airplanes. Those trips have been the source of some of my happiest memories, as well as some of the best lessons I could hope to learn about flying. For that reason, I often wish I had taken more time after each of those trips to capture the key points of the personal and professional (i.e., pilot-related) experiences in more detail. I've resolved to do better in that area by adopting the Replay-Reconstruct-Reflect-Redirect framework presented in Chapter 5 of the *Aviation Instructor's Handbook*, which offers a methodical way to make the most of each flight experience. Here's how it can help.

Replay

When you land after a long flight, especially one that involved weather or other challenges, your first inclination is to relax. That impulse is both natural

I often wish I had taken more time after each long trip to capture the key points of the personal and professional (i.e., pilot-related) experiences in more detail.

and necessary. Before you allow too much time to elapse, though, mentally replay the flight from start to finish. Use a camera, an app, or even old-fashioned pen and paper to capture your memories and

perceptions while they're still fresh. You might consider listing them in two columns — one for personal memories, and one for pilot-related perceptions.

Reconstruct

In this phase, the idea is to identify the key things you would have, could have, or should have done differently in connection with this flight. I can think of a couple of trips that, in hindsight, I would not have taken at all. I can also recall trips in which I wasn't as prepared as I should have been. We pilots tend to be our own worst critics, but the point is not to endlessly beat yourself up. Rather, the goal is to make an honest assessment of gaps in knowledge or skill and make a plan to close them.

Reflect

As the *Aviation Instructor's Handbook* notes, "insights come from investing perceptions and experiences with meaning." That requires reflection, which is nothing more complicated than asking yourself questions about the experience and answering them as honestly as you can. For example, what was the most important thing you learned from this flight? What part of the experience was easiest? By contrast, what part was the hardest, and why? Did anything make you uncomfortable? If so, when, how, and why did it occur? How would you assess your performance, and your decisions?

Redirect

This part of the exercise is to relate lessons learned to other experiences, and consider how the lessons learned might help on the next trip you make. Ask yourself how this experience relates to other trips you've made. What lessons could you use to mitigate risk, or perform better, in the next cross-country flight? Do you need to adjust your personal minimums? Did this flight indicate a need for deeper knowledge, or for sharper skills? If so, how and when will you take action to close the gaps?

Recommit

This one is not included in the *Aviation Instructor's Handbook*, but I think it's an important addition. After each flight, recommit to attaining the highest level of professionalism and proficiency that you can achieve.

Rejoice!

And, last but not least, take the time to rejoice in the wonderful blessings and privileges that GA flying offers. I never fly even the shortest trip without a sense of awe and gratitude. Thus may it always be for each and every one of us.

Susan Parson (susan.parson@faa.gov, or @aviBrix for Twitter fans) is editor of FAA Safety Briefing. She is an active general aviation pilot and flight instructor.

FAA Faces

Larry Clymer

Aviation Safety Inspector, Light Sport Aviation Branch



Would you rather fly or take a road trip? Well ... Larry Clymer remembers thinking about that very question as a kid, imagining how great it would be to fly to the Oklahoma side of Lake Texhoma for all those family vacations. It would sure beat getting stuck in traffic!

"I remember watching airplanes land at the airport right next to the lake, and I thought that it would be fun to fly down instead of the three-hour car ride," notes Larry.

Of course we would *all* prefer to fly. From a young age, though, Larry knew that love for aviation was in his blood. To pursue this interest, he trained to become a pilot in civilian aviation and a flight engineer on a C-130 *Hercules* in the Oklahoma Air National Guard.

And then things got more serious. On a random day in 1979, while training at Keesler Air Force Base in Mississippi, Larry saw a row of tiny Cessna 152s parked along the flight line. That was the moment he decided to earn his pilot wings.

"I walked over and asked one of the flight instructors why civilian airplanes were on a military base. I found out they were part of the base aero club, and that you could learn to fly there!"

The rest, as they say, is history. Larry now has both airline transport pilot (ATP) and flight instructor (CFI) certificates with single and multi-engine airplane, gyroplane, powered-parachute, and weight-shift ratings. He has owned four different aircraft over the years and spent 10 years in a flying club.

While part of the Air Guard, Larry worked right across the runway from FAA's Mike Monroney Aeronautical Center in Oklahoma City. He investigated

opportunities and in 2001, he hired on as an aviation safety inspector (ASI) in the FAA Flight Standards Service's Regulatory Support Division. This division promotes safety through the development, implementation, analysis, and distribution of technical information it provides to the aviation community. Its responsibilities include managing airman testing, designee standardization, and aviation data systems.

Having launched his FAA career around the time when the agency issued the Sport Pilot/Light Sport Airplane rule, Larry discovered a wide range of new opportunities. Because his division would be writing the Practical Test Standards (PTS) and knowledge test questions for the new pilot certificate, Larry volunteered to take the lead on the PTS for powered-parachutes.

As part of the division's Light Sport Aviation Branch, Larry now provides oversight to light-sport designated pilot examiners (DPEs) across the country. The branch manages and provides oversight of the sport pilot examiner and the light sport aircraft repairman-training programs. It also provides subject matter experts for FAA and the aviation industry on sport pilot/light sport aircraft safety initiatives.

"The FAA recently created a new DPE category called Specialty Aircraft Examiners," notes Larry. "These examiners are primary DPEs whose area of expertise does not fit into the traditional DPE types. The SAE corps includes examiners who were previously National Designated Pilot Examiners, Flight Engineer Examiners and Experimental Aircraft Examiners, as well as our Sport Pilot Examiners and Sport Pilot Flight Instructor Examiners. This is an exciting new program for our branch."

Larry also spent six years teaching at the FAA Academy in Oklahoma City. As both a teacher and as an ASI, his advice is to always ask questions. "If you don't understand something, ask somebody. This is especially important if you're planning a flight to some corner of the country you don't know. Just remember that the only dumb question is the one you didn't ask."

Paul Cianciolo is an assistant editor and the social media lead for FAA Safety Briefing. He is a U.S. Air Force veteran, and a rated aircrew member and search and rescue team leader with the Civil Air Patrol.





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