

# FAA Safety

## BRIEFING

September/October 2017

*Your source for general aviation news and information*



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Flight Instructor Resources — Your  
Guide to Lifelong Learning **p 14**

Shifting Gears — Tips for Tackling  
Transition Training **p 26**



Federal Aviation  
Administration

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The September/October 2017 issue of *FAA Safety Briefing* explores the critical role flight instructors play in keeping the National Airspace System safe. Feature articles focus on flight instructor requirements and best practices as well as the many tools and educational resources that can help sharpen your teaching skills.



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## The Right Stuff

A few months ago, I spotted an *Air Facts Journal* article with an eye-catching title: “I Was John Glenn’s Flight Instructor.” Of course I stopped to read the piece, which is author Kent Ewing’s account of flying with the late Senator Glenn during eight Bonanza Pilot Proficiency Program (BPPP) clinics in Columbus, Ohio. Mr. Ewing’s BPPP sessions with Senator Glenn started when the former astronaut was 82, and continued until he was 90.

I commend the article to you (see URL at the end of this column) if only for what the author modestly characterizes as “a few observations and cockpit and hangar flying stories.” More fundamentally, though, I think this piece has several important lessons for not just flight instructors, but for everyone who flies.

### A good pilot is always learning

Senator Glenn owned a 1986 58P *Baron* until about five years before his passing. When Mr. Ewing once inquired as to why he was attending the BPPP clinic, the response was: “It doesn’t matter who you are. When you reach your 80s, the insurance industry wants you to complete a formal training course annually.” Even if insurance company requirements were the catalyst for recurrent training, Mr. Ewing’s account makes it clear that Senator Glenn was a conscientious pilot. He recognized not only the need to practice traditional maneuvers like partial panel flying, but also the need to learn new things, such as using a handheld GPS moving map navigator. Mr. Ewing’s article clearly conveys the humility that Senator Glenn (“always a gentleman”) demonstrated during recurrent training. He never assumed he knew everything. He prepared for his flights; he came to clinics with questions and goals; and he sought to gain the most from each flight and each clinic.

### A good instructor is always prepared

I suspect that most of us might be a tad intimidated to find ourselves assigned to instruct someone as illustrious as a former astronaut. While few of us are likely to have that particular experience, I imagine that every instructor has — or eventually will have — at least one story about flying with a pilot with impressive credentials and/or far greater experience. Here again, Mr. Ewing’s experience is, so to speak, instructive. Senator Glenn approached his recurrent training with humility and discipline, and

Mr. Ewing approached his instructor role in exactly the same way. He naturally treated his distinguished client with great respect, but he did not confuse respect for the person and his many aviation accomplishments with his obligations as a flight instructor — that is, to provide a thorough and appropriately challenging training session, and to give candid feedback during both the actual flights and the post-flight briefing sessions.

Another lesson from the article is the way that Mr. Ewing worked to target training experiences to align with the kind of flying Senator Glenn typically did. I’ll let you read the article to get the details, but the point is clear: an instructor owes it to each pilot and, indeed, to everyone else in the National Airspace System (NAS), to tailor the training program to specific individual needs and requirements.

### A good instructor has the right stuff

It’s a common view that one of the most challenging aviation tasks is passing the practical test for an initial flight instructor certificate. Let me state clearly that the certification process cannot and should not be a “gotcha” exercise. Through FAA/industry effort on the

Airman Certification Standards (ACS) project, we are working hard to eradicate any hint of “gotcha” from both the knowledge exam and the practical test for airman certificates and ratings. That said, I make no apology for an appropriately challenging flight instructor certification process. You don’t have to be an astronaut like Senator Glenn to instruct, but in order to do the job as it must be done, you do have to have the proverbial “right stuff.”

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**He did not confuse respect for the person and his many aviation accomplishments with his obligations as a flight instructor.**

### Learn More

[airfactsjournal.com/2016/12/john-glenns-flight-instructor](http://airfactsjournal.com/2016/12/john-glenns-flight-instructor)





### **FAA Aircraft Certification Service Transformed**

The FAA's Aircraft Certification Service (AIR) is comprised of more than 1,300 engineers, scientists, inspectors, test pilots, and other experts responsible for the design and production approval, airworthiness certification, and continued airworthiness programs of all U.S. civil aviation products. As part of the FAA's efforts to improve its responsiveness to the U.S. aviation industry as it certifies new products, the agency is refreshing its certification strategy, investing in management systems to improve performance, and the organization. Streamlining its regulations and policies will help the industry move products to market faster and retain competitiveness.

On July 23, AIR implemented a new, functionally-aligned organizational structure to execute the certification strategy. Realignment, the first visible phase of this approach, groups similar organizations together to create the functional divisions while maintaining existing sub-division organizational structures. During this phase, the existing industry points of contact will be retained to ensure seamless relationship management and to facilitate contact with the appropriate FAA employees. As an outcome of realignment, the directorate structure will cease to exist.

### **New VFR Flight Plan Services**

Leidos Flight Service's new *EasyActivate*, *EasyClose*, and *Close Reminder* services will automatically be turned on for all registered users of [www.1800wxbrief.com](http://www.1800wxbrief.com). These services let you activate or close a VFR flight plan simply by clicking a link in an email or text message that's sent to you 30 minutes before departure and arrival. These actions are recorded and included in your pilot history. Reminders are sent when a VFR flight plan is not closed within 20 minutes of the expected arrival time. These services will be automatically applied to all of your VFR flight plans, regardless of whether you file via phone call or online.

Initially, the service will be turned on for email delivery, but you can change it to, or add, text message delivery. Click on the EasyActivate/EasyClose link at the top of the Pilot Dashboard at [www.1800wxbrief.com](http://www.1800wxbrief.com).

There are other options for electronically activating and closing VFR flight plans. You can activate on [www.1800wxbrief.com](http://www.1800wxbrief.com) from the Pilot Dashboard, including assumed departures up to 30 minutes from current time. You can close VFR flight plans from the website as well. Also, several of the flight planning and electronic flight bag (EFB) vendors that have integrated with Leidos Flight Service provide VFR activation and closure directly in their apps or websites.



**FAA Administrator Huerta Addresses AirVenture Audience**

In a bittersweet farewell at EAA AirVenture in Oshkosh, Wisc., FAA Administrator Michael Huerta emphasized the importance of government and industry partnerships to bolster GA safety and efficiency.

"We need to have a meaningful discussion about how we can improve the services we deliver today — while preparing for an increasingly complex and growing set of users in the future," he said. "Some day in the not too distant future, your planes will still be sharing airspace with jumbo jets and helicopters - but also commercial space rockets, package delivery drones, aerial taxis, and other technologies that haven't even been dreamed up yet. ... At the end of the day, the FAA wants to deliver the traveling public and all airspace users a safe and efficient air traffic system that is second to none."

Go to [bit.ly/2uWWNrB](http://bit.ly/2uWWNrB) to read the entire speech.

**FAA Administrator Michael Huerta with EAA CEO/Chairman Jack Pelton at AirVenture.**

## SAIB Stresses Inspection of Cessna Main Landing Gear Actuator Assembly

On June 9, 2017, the FAA issued a Special Airworthiness Information Bulletin (SAIB) for Cessna Models 172RG, R182, TR182, FR182, and all variants of 210/T210/P210-series airplanes with the exception of the Models 210 and 210A airplanes. The SAIB emphasizes the importance of inspecting main landing gear actuator assemblies for cracks following Textron Aviation Inc. supplemental inspection documents (SIDs) applicable to each model to prevent gear extension and retraction malfunctions. To view the SAIB and all related SIDs, go to [go.usa.gov/xNVE7](http://go.usa.gov/xNVE7).

## Amended AD Issued for Piper Oil Cooler Hose Assemblies

Last July, the FAA superseded airworthiness directive (AD) 95-26-13 for certain Piper PA-28 and PA-32 models equipped with oil cooler hose assemblies that do not meet certain technical standard order (TSO) requirements and which could rupture or fail. The superseded AD retains all of the requirements of the original AD and adds language to clarify its applicability and compliance requirements. The FAA estimates that this AD affects 23,643 airplanes of U.S. registry but that the revision will not increase the economic burden or the scope of the AD for any operator. For more details, go to [bit.ly/2sR28NR](http://bit.ly/2sR28NR).  
PIREPs to Fly Faster



## PIREPs to Fly Faster

In response to NTSB recommendations outlined in a recent report, the FAA's Flight Service is focusing on efforts to reduce the time specialists keep pilots on frequency to obtain Pilot Weather Report (PIREP) information, increase the submission window to more than one hour, and develop guidance for PIREP solicitation and dissemination.

PIREPs are brief weather reports describing inflight weather conditions. They are an important source of information used to verify or amend aviation forecast and advisory products, and they play a vital role in supporting flight safety for all aircraft operations. PIREP end users include other pilots, company flight-handling personnel such as dispatchers and flight coordinators, air traffic controllers, National Weather Service (NWS) meteorologists, and weather researchers.

Leidos Flight Service (formerly *Lockheed Martin Flight Service*) instituted an internal practice to read back all PIREPs to ensure information is captured correctly. As an unintended consequence, pilots often remain on frequency longer to complete the report. To achieve the goal of reducing the amount of time spent by pilots on

## Safety Enhancement Topics

### September:

#### Flight Training after Period of Inactivity

Be prepared when returning to the skies.



### October: Survival

Explore the scope and safety benefits of survival training and equipage.



Please visit [www.faa.gov/news/safety\\_briefing](http://www.faa.gov/news/safety_briefing) for more information on these and other topics.



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### CONTACT INFORMATION

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frequency while maintaining accuracy, a test will modify the mandatory readback practice, which will allow specialists to use their best judgment if uncertain about the data received.

In the past, PIREPs, considered current weather and appended to current conditions at the nearest reporting station, were not useful more than one hour after occurrence because the information disappeared with the next hourly report. With advanced computer technology, data storage is no longer an issue. PIREPs provide valuable information used to fill in observation gaps for sophisticated forecast models.

The NWS stated that the data could help to improve forecasts even if they are three hours old. PIREPs filed after landing are still beneficial if the time and location of the weather phenomena are accurate. Flight Service is working with its service providers to open the window of PIREP submission to capture more data, and pass it through the system.

The PIREP process is complex with its many stakeholders including the FAA, National Air Traffic Controllers Association, NWS, and the pilot community. Flight Service will engage stakeholders to develop best practices, increase the quantity and quality of PIREPs, and ensure data moves quickly from pilots to end users.

## ***Drone ID Aviation Rulemaking Committee Update***

The first meeting of the UAS Identification and Tracking Aviation Rulemaking Committee (ARC) on June 21-23 advanced key policies of concern to the FAA, industry, and law enforcement.

During this initial meeting, the ARC considered issues such as existing regulations applicable to drone identification and tracking, air traffic management for drones, concerns and authorities of local law enforcement, and potential legal considerations. The group developed some preliminary questions and identification parameters, and reviewed a sample of existing identification technologies.

The group's membership represents a diverse variety of stakeholders, including the unmanned aircraft industry, the aviation community and industry member organizations, manufacturers, researchers, standards groups, local law enforcement and other officials.

The ARC will continue to meet as necessary to develop solutions that function at federal, state, and local levels.

## Course Correction

It's no secret that substance abuse and dependence is a real problem in the modern world. Like it or not, that also means that substance abuse is a real problem in aviation as we are an integral part of that world. Our post-accident toxicology reports have confirmed this. For obvious reasons, substance use and dependence don't mix with flying. That's why both are considered disqualifying. But while use of a substance can be temporary and does not preclude a return to flight provided the proper wait times are heeded, substance abuse and dependence is another story. How do you deal with a chronic relapsing disease like substance dependence?

### A New Path

Until 1974, there were no options available to a pilot with a diagnosis of substance dependence other than to stop flying forever. That's when Air Line Pilots Association (ALPA), in cooperation with the FAA and funded by the National Institute for Alcohol Abuse and Alcoholism (NIAAA) implemented a study, the Human Intervention Motivation Study (HIMS). In the years before this, ALPA and the FAA were looking for a way to get pilots in recovery back into the cockpit without compromising safety. This was around the time the medical community and we in the medical certification business were beginning to approach substance dependence as what it is, a chronic disease. Our goal was to treat the disease, not punish the airman.

With this shift in thinking, we started to look at what kind of program we might need to treat this disease in a way that would allow the FAA to authorize a special issuance medical certificate to those pilots who were in satisfactory recovery, and allow them to fly again. The HIMS program not only did that, but also became the gold standard for such programs worldwide. In the private sector, a treatment program would be considered good if it achieved a success rate of 25-30 percent. The HIMS success rate is 85 percent. I'm quite familiar with this program as I was a HIMS Aviation Medical Examiner (AME) for 25 years before I joined the FAA. Having seen what HIMS has accomplished on both an individual pilot as well as an industry level, has made me quite proud of the program.

### What is HIMS?

HIMS was originally designed for airline pilots, but is now available to be used by pilots with all classes of medical certificates. In fact, over the last 10 years the number of third-class medical certificates issued under the HIMS process has accounted for almost a third of the total airmen in the program. The goal of HIMS is to get airmen treated and into recovery, and then allow them to rejoin the aviation world under supervision.

HIMS is a multi-step process that is designed to be tailored to each individual, but there are a few milestones. First, the pilot must attend either a residential or acceptable intensive outpatient treatment center. Next, in consultation with a HIMS AME, the pilot must be active in a group aftercare program to continue recovery after initial treatment. The FAA also expects pilots to engage with a peer pilot, usually one that's in recovery as well, and in other support programs, like Alcoholics Anonymous, to help reinforce the structured aftercare. The goal of this phase is to establish a supportive network between aftercare, peer support, and the HIMS AME. The FAA also requires monitoring via random alcohol and drug testing, which can occur daily in some cases.

The HIMS AME helps design a recovery program that best fits the pilot's individual needs. When reviewing cases as a HIMS AME, I always looked for an "aha!" moment in the records from the pilot's initial treatment. This evidence of acceptance of the disease is critical to the success of long-term recovery.

So what happens if a pilot relapses? Like any chronic disease, the first step is to treat the underlying cause of the disease. The HIMS AME will consider the circumstances and make changes to the HIMS program to address the relapse. While repeated relapses may require a more stringent program, there is no maximum limit to the number of relapses allowed.

Here's the bottom line: If an airman is willing to do the work to get better, we're willing to help. HIMS may not be the easiest program to return to flying, but it is one of the most effective when it comes to substance abuse and dependence.



# Ask Medical Certification

PENNY GIOVANETTI, D.O.  
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**Q1.** During the process of selective serotonin reuptake inhibitors (SSRI) certification for the first time, can a pilot update his status if he has elected to stop using the SSRI after 60 days? How should the FAA be updated?

**A1.** The choice to discontinue use of any prescribed medication should be made in conjunction with your physician. Assuming you were not taking the SSRI for a diagnosis of recurrent depression, we need a letter from your treating physician addressing your diagnosis, the date you stopped the medication, current status, and prognosis.

**Q2.** What is the full word on relaxing “Sleep Apnea” requirements? Can my AME observe me, without having a new sleep study completed or reading some card from a CPAP?

**A2.** All the requirements for renewal of your special issuance for obstructive sleep apnea should be in your authorization letter. Normally a new sleep study is not required unless something about your condition has changed. Compliance trend data from your CPAP machine usually is required, as well as an Airman Compliance with Treatment form signed by you, and a current status report from your treating physician annually.

**Q3.** What exactly is to be included in a letter from my GI doctor to my FAA medical examiner in regard to my IBS?

**A3.** We need either clinic notes or a letter from your GI doc that tells us the diagnosis (IBS); the severity, how long you have had it, any complications (such as a GI bleed, hospitalization, or recent surgery) or symptoms and what medications you take for this condition. A good place to start is the CACI Colitis Worksheet which can be found at [faa.gov/go/caci](http://faa.gov/go/caci). If your condition is more severe than what is required under CACI, you may still qualify under the Special Issuance process.

**Q4.** I have mild glaucoma in each eye and am being treated for it by an MD. At present, I am

taking medication nightly in the form of eye drops. I get an examination yearly coupled with the field of vision. I am pleased to report all is well optically. I have been getting the 2nd class medical which requires all the test results to be sent to the Aeromedical Branch in OK City. In the future I will be flying on a 3rd class medical. Will the medical requirements for my eyes change from the 2nd to 3rd class medical?

**A4.** Sounds like you are taking good care of this condition. The visual acuity standards will relax some with third-class, but the medical follow up should not change. Everyone has the same responsibility to see and avoid. The effects of glaucoma can be subtle and unrecognized if not followed carefully.

**Q5.** What is the process and requirements to renew a 3rd class medical after a stroke?

**A5.** Not all strokes are created equal and certification decisions depend heavily on the type and location of the stroke, as well as recovery of nerve and cognitive function. Usually, there is a two-year waiting period before medical certification can be considered because this is the highest risk time for another stroke or stroke related seizures. We would need to review all medical records and imaging studies from the stroke event and follow up. Current thorough neurology and neuropsychology evaluations, as well as MRA or CTA of the head and neck, are required for all types of stroke. Carotid artery ultrasound, cardiovascular evaluation, and follow-up MRI or CT may be required.

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**Send your questions to [SafetyBriefing@faa.gov](mailto:SafetyBriefing@faa.gov). We'll forward them to the Aerospace Medical Certification Division, without your name, and publish the answer in an upcoming issue.**

# Compliance Philosophy *for* Flight Instructors



Photos by Chris Morris

## *A Look at Regulations and Safety Management*

As every instructor knows, the regulations are an integral part of flying and therefore an integral part of flight and ground instruction. For example, prior to a cross-country flight under visual flight rules (VFR), a discussion on regulatory requirements pertaining to weather minimums, recent experience, and fuel requirements is both typical and appropriate. Looking back to my occupation as a full-time flight instructor, I recall generally framing the regulations as something that had to be done to avoid a potential punitive response on the part of the FAA. While it is true that deviating from the regulations may invoke FAA action, I really missed an opportunity to discuss the regulations with safety considerations as the main focus.

The FAA's Compliance Philosophy provides a good foundation as to how we should approach the regulations. In this article, we'll discuss the regulations as risk controls, incorporating safety management principles, and expectations during an investigation. We'll explore what these topics mean to pilots — and how they should be approached by flight and ground instructors — so you don't miss the same opportunities I did.

### Quick Overview

Before we get into the details, let's review some of the high-level points. The Compliance Philosophy:

- requires and expects compliance with the regulations,

- is designed to manage risk through identification and control of existing or emerging safety issues,
- places emphasis on effective compliance by focusing on how participants in the National Airspace System (NAS) ensure compliance,
- fosters an open exchange of information between the FAA and the aviation community to allow safety problems to be understood and appropriately addressed,
- encourages a problem solving approach to finding and fixing problems in the NAS, and
- expects NAS participants to utilize safety management system constructs to identify risks.

### Taking Control

While it may be easy to teach the regulations as simply something that must be followed, I encourage you to take it a step further; consider the regulations as risk controls. This makes sense considering the FAA generally takes rulemaking action to address those risks that are common to all or large portions of participants in the NAS. When conditions are identified in the NAS that present an unacceptable risk — generally with input from the aviation community — the FAA may propose new regulations through the public rulemaking process.

Nearly all regulations address situations with the

potential for significant damage or harm. The objective of most regulations is to reduce the likelihood of hazard(s) resulting in a negative outcome (such as an accident). If the regulation is not met, the level of risk should be considered uncontrolled. This means there is no level of noncompliance with the regulations that can be considered acceptable.

In order for the risk controls in regulations to be effective, we must take actions to apply the regulations to our operations. The actions for effective compliance can be broken down as follows:

- Determine what regulations are applicable to the flight
- Consider the hazards addressed in those applicable regulations, and
- Decide what action(s) to take to conform to the regulations in a manner that effectively controls the risk

Using the cross-country as an example, you would likely determine that Title 14 Code of Federal Regulations (14 CFR) section 91.155(a) — part of the basic VFR weather minimums — is applicable. The hazards being addressed by this regulation include clouds and restrictions to flight visibility. One of the risks involved with not adhering to this regulation is the potential for a mid-air collision. You and your student review the weather forecast and plan to fly at an altitude that will keep you below the bottom cloud layer. You also plan to check weather at nearby airports during the flight to make sure the cloud heights and visibility remain as forecasted. You also remind your student of the importance to visually scan for other aircraft throughout the flight.

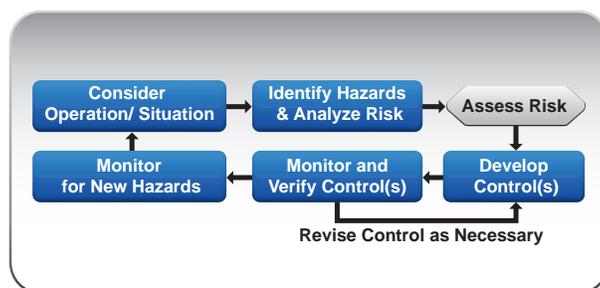
Developing rules for every possible situation is ineffective — if not impossible. Although compliance with the regulations remains the minimum expectation, experience has shown that simple compliance with regulations does not guarantee safety. Some risks are not common to all NAS participants; rather, they are unique to individual persons. This may be due to specialized equipment, the environment or other conditions, or the type of operation. So while some situations are not addressed directly by the regulations, the risks are still present and therefore must be proactively identified and managed.

## Safety Management

So how can we address the risks that are not covered by the regulations or other safety standards? The answer is safety management. Basically, safety management is a problem-solving approach where

individuals and organizations have the primary responsibility for safety performance. Good safety management practices are expected of all pilots. We must proactively identify and manage risks that are applicable to our flying. For individuals, this may be as simple as setting personal minimums, use of memory aids, pre-flight preparation checklists, or adopting good personal habits. For organizations, safety management may involve more complex strategies, such as specialized training or procedural tools like formal hazard identification and risk assessments.

You may have seen the graphic depicted in Figure 1 in previous editions of *FAA Safety Briefing*. This diagram is useful in visualizing the steps pilots can use for their own safety management.



**Figure 1. Safety Management Overview**

The FAA has developed a document containing elective lesson materials for Flight Instructor Refresher Course (FIRC) providers who wish to offer instruction concerning the Compliance Philosophy. This document offers an expanded description of the diagram in Figure 1. See the additional resources listed at the end of this article for the link.

## What about Enforcement?

You may be thinking that the FAA's Compliance Philosophy is to address situations where regulatory violations have occurred. While that's true, it's not the whole story. Instructors have the ability to make sure that those we train understand both the risks involved with flying and how to employ good safety management principles to address those risks. This includes practices that focus on how we comply with the regulations. In this way, the Compliance Philosophy promotes continued compliance to prevent a deviation as well as how to address a deviation once it has occurred.

As noted in this issue's Checklist department ("Communicating the Concept of Compliance"), the FAA recognizes that should a regulatory deviation occur, it likely results from a lack of training or

knowledge, diminished skills, and/or flawed procedures. Such deviations can most often be addressed with non-enforcement means — called Compliance Actions — that include on-the-spot corrections, counseling, and remedial training.

If you or your students become the subject of an FAA investigation, do not panic. Keep in mind that the objective of the FAA is to determine whether or not a regulatory deviation or other safety issue is present. If so, the FAA will seek to work with you through an exchange of information to determine the root cause and the best course of action to fix the problem. Part of the FAA's analysis is whether the person(s) involved are willing and able to return to, and remain in, compliance. By instilling good principles in those you train, you are giving them the solid foundational tools to maintain their compliance with safety standards.

In all cases, you should encourage your students to take steps on their own to address any known safety risks. This may involve avoiding flying, or at least that kind of operation, until the problem is fixed. Of course, this is prudent whether or not someone is being investigated by the FAA. For example, if a pilot is involved in a deviation due to misunderstanding an IFR clearance, it would be sensible to avoid further IFR flights until they obtained recurrent training on IFR procedures. The FAA's Flight Standards Service Compliance and Enforcement Policy requires Aviation Safety Inspectors (ASIs) to resolve a regulatory deviation with a Compliance Action unless enforcement is necessary. ASIs are able to take into account corrective actions that have been initiated or completed by the persons involved.

### Instructional Tools

As an instructor, you have a great opportunity to discuss risk controls and safety management in order to empower those you instruct to remain in compliance with the regulations and other safety standards. Below are some highlights as to how you

can promote the safety practices discussed in this article (additional details can be found in the FIRC lesson referenced earlier in the article):

- Help your students develop safety management principles, including personal minimums, checklists, and memory aids such as IMSAFE and PAVE.
- Encourage your students to seek recurrent training above the minimum required by the regulations.
- Strive to provide comprehensive flight reviews and instrument proficiency checks.
- Encourage those whom you fly with to seek proficiency training when their skills/knowledge may have diminished, or if they are flying in a different aircraft or environment from what they are used to.
- Advocate staying engaged with updates affecting general aviation. One way to do this is to share with your students the resources that you use to stay current. ✈️

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### Learn More

#### FAA Compliance Philosophy

[faa.gov/go/cp](http://faa.gov/go/cp)

#### FIRC Elective Lesson Materials on Compliance Philosophy

[go.usa.gov/xRjTe](http://go.usa.gov/xRjTe)

#### Reach out to your local FAA Team Program Manager (FPM)

[go.usa.gov/xRjbr](http://go.usa.gov/xRjbr)



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SUSAN PARSON

photo courtesy of Civil Air Patrol

# Getting the Gouge

## Ten Things Instructors Need to Know about Using the ACS

**B**y now, you probably know the most basic facts on the Airman Certification Standards (ACS), which first began to replace the practical test standards (PTS) in June 2016. Just to recap:

- The ACS is an enhanced version of the PTS that adds task-specific knowledge and risk management elements to the skill elements in each PTS Area of Operation and task. It provides a single-source set of standards for what an applicant must *know*, *consider*, and *do* to pass both the knowledge exam and the practical test.
- The ACS results from six years of extensive and continuing collaborative work by FAA Flight Standards employees and a diverse group of aviation industry training experts.
- In June 2016, the FAA replaced the PTS for Private Pilot-Airplane and the Instrument-Airplane rating with the corresponding ACS. In June 2017, the FAA published the first

version of the Commercial Pilot-Airplane ACS, along with revised versions of the ACS for the Private Pilot-Airplane certificate and the Instrument-Airplane rating.

Now let's look at some specific questions.

### 1. I'm an instructor. How do I use the ACS?

You do need to carefully read the entire document (including the ACS Introduction and the appendices) to understand how it all works together. In general, though, you use the ACS just as you used the PTS, but the ACS provides more information. The ACS guides you in teaching and training an applicant on everything he or she must know, consider, and do to pass the knowledge test and the practical test. The presentation of risk management elements will help you better develop and deepen the applicant's understanding of how knowledge, risk management, and skill elements work together for safe performance of each task, both for the certification tests and during "real-world" operation later on.

## 2. How does the ACS affect the way I teach ground school?

If you are using the ACS as a guide to your syllabus and curriculum content, anyone you teach in a ground school course will be very well prepared to pass the knowledge test. If your applicants have taken the FAA knowledge test for the Private Pilot Airplane certificate, the Commercial Airplane certificate, or the Instrument Airplane rating in the last year, they have actually taken an “ACS knowledge test,” because the FAA has already aligned all active knowledge test questions for these airman qualifications with the corresponding ACS.

When you are preparing an applicant for the knowledge test, be sure to cover all the elements — knowledge, risk management, and skill. While the knowledge test is primarily focused on elements in the “K” and “R” sections, there are also questions that ask an applicant to “calculate” or “determine” some value. The FAA assigns a skill (“S”) code to questions of this nature.

## 3. How does the ACS change the way I conduct flight training?

In most cases, the ACS does not change the expectations or values for acceptable performance of PTS skills tasks and maneuvers. You should use the knowledge and risk management elements in each task to ensure that the applicant fully understands each maneuver but, since the ACS does not change the expectations or values for acceptable performance of PTS skills, tasks, and maneuvers in most cases, there will be no major change in how you teach stick and rudder skills.

The exception is in the Slow Flight and Stalls Area of Operation of the ACS for Private Pilot Airplane and Commercial Pilot Airplane, so please pay special attention to these tasks. You should also be familiar with FAA Safety Alert for Operators (SAFO) 17009, *Airman Certification Standards (ACS): Slow Flight and Stalls* ([go.usa.gov/xN6WP](http://go.usa.gov/xN6WP)).

## 4. How does the FAA keep the testing of risk management items from being subjective?

Risk management is unique to each and every individual, but the ACS defines the circumstances, conditions, or risks applicable to each task, not to the specific operator. Applicants will thus be tested on their awareness and mitigation of the risks associated with the task at hand, which includes consideration of these elements in the context of the maneuver itself plus the pilot’s experience and ability, the aircraft used, and the operating environment.

The PTS also required evaluation of these items, but it offered little more than a statement of the requirement and, in the case of “Special Emphasis” items, a list of subjects the DPE must evaluate. The ACS provides better guidance because it provides specific risk management and Aeronautical Decision-Making procedures and behaviors associated with each task, and it incorporates Special Emphasis items in the risk management section of the appropriate Area of Operation/Task. This presentation helps instructors make stick and rudder skills more meaningful by teaching them in the context of what the applicant must know and consider while demonstrating flight skills. On the practical test, it allows the evaluator to see and assess an applicant’s judgment and decision making in the context of actual flight operations.

For the knowledge exam, both the FAA and the industry ACS Working Group members have reviewed ACS task elements to ensure that the FAA has guidance to support them, and the FAA is careful to verify that the agency has an appropriate reference for each knowledge test question that we review or develop.

## 5. What’s the story on ACS codes?

The ACS assigns a unique code to each knowledge, risk management, and skill task element. These codes provide the means to correlate the tasks in the ACS with guidance and testing, and to keep them aligned going forward. As soon as the technical capability comes online, the ACS codes will supersede the current system of “PLT” Learning Statement Codes (LSC).

The ACS coding system has four elements that are anchored in the ACS (i.e., in the standard itself, not in reference documents like the current LSCs).

### PA.I.E.K2:

PA = Applicable ACS (Private Pilot - Airplane)

I = Area of Operation (Preflight Preparation)

E = Task (National Airspace System)

K2 = Task element [knowledge (K), risk management (R), skill (S)] (Charting symbology)

The limitations of today’s knowledge test management system do not permit the FAA to print ACS codes in lieu of the Learning Statement, or PLT, codes. The agency is contracting for a test management services system that will include this capability. In the initial ACS implementation phase, applicants, instructors, and evaluators continue to see PLT codes on the airman knowledge test report.

## 6. If I can't see ACS codes on the applicant's Airman Knowledge Test Report (AKTR), how do I conduct remedial training?

You can still use the ACS for more efficient retraining and retesting. Each ACS code is unique to a knowledge, risk management, or skill element in the standard. All active knowledge test questions for the Private Pilot Airplane certificate, the Commercial Pilot Airplane certificate, and the Instrument Airplane rating have been aligned with the applicable ACS. The PLT codes on your applicant's airman knowledge test report will help you with more efficient retraining, because you can use them to zero in on a smaller number of ACS tasks rather than going through multiple references in an attempt to find the specific subject in which the applicant is deficient.

For example, there are at least six Learning Statement (PLT) codes that refer to airspace:

- PLT 040 Airspace classes, charts, diagrams

- PLT 161 Aircraft systems / avionics / transponder / airspace / publications / AFD / transponder operations
- PLT 162 Airspace requirements, operations
- PLT 163 Airspace requirements, visibility / cloud clearance
- PLT 376 Airspace, special use, TFRs
- PLT 393 Airspace, regulations / restrictions

The PLT codes are tied to references, and the scope for retraining and retesting is very broad. The ACS enables an instructor to narrow the scope and retrain an applicant whose Airman Knowledge Test Report includes one of these codes in the context of specific ACS tasks. For example, you can:

- Ask about airspace in the context of planning a cross-country flight (PA.I.D.K1)
- Ask about airspace as part of preflight preparation (PA.I.E.K1)
- Ask about airspace as part of preflight assessment (PA.II.A.R3)
- Ask about airspace as part of ground reference maneuvers evaluation (PA.V.B.S1)

## 7. What is the difference between the ACS and a training syllabus?

The ACS defines what the applicant must know, consider, and do to earn an airman certificate or rating. A training syllabus defines how (where, when, and why) these standards are met.

## 8. Does the ACS require scenario-based training and evaluation?

Yes. As stated in the ACS introduction, for appropriate items "the evaluator will assess the applicant's understanding by providing a scenario that requires the applicant to appropriately apply and/or correlate knowledge, experience, and information to the circumstances of the given scenario." In support of this requirement, the ACS presents specific elements of knowledge and risk management in the context of each skill task. To further assist the community in this area, industry members of the ACS project team drafted guidance for both FAA inspectors and external evaluators to provide clarity on the 'plan of action' and use of scenarios. See [go.usa.gov/xN6Zm](http://go.usa.gov/xN6Zm) for details.

## 9. When is the FAA going to expand the ACS to other certificates and ratings?

Through the Aviation Rulemaking Advisory Committee (ARAC), the FAA originally asked



*Palm Springs Flying School flight instructor Brian Carr gives a flight lesson to Rudy Gonzalez, 18, at Jacqueline Cochran Regional Airport in Thermal, Cal. The lesson, which was conducted in a 1961 Cessna Skyhawk 172B, was the teenager's third.*

industry to develop ACS documents for the Private Pilot, Commercial Pilot, Instructor, and Airline Transport Pilot certificates and the Instrument Rating, all in the airplane category. In December 2015, the FAA added the Aircraft Mechanic Certificate with Airframe and/or Powerplant ratings to the ACS Working Group's charter.

The ACS will eventually replace the PTS for all categories and classes. The next phase is to finish the ATP, the instructor (all in the airplane category), and the Aircraft Mechanic ACS by the end of December 2018. We will confer with our industry partners to prioritize development work beyond this point.

## 10. What can you tell us about the Instructor ACS?

As of summer 2017, the industry members of the ACS Working Group are wrapping up work on an initial draft for the Instructor certificate (airplane category). The construction of this document should be familiar to anyone who has used the existing ACS documents, but the Instructor ACS does have some important differences. For maneuvers that the applicant is expected to be able to teach:

- The *Knowledge* section requires the applicant to demonstrate instructional knowledge by describing and explaining the elements of the Task as stated in the "foundational" ACS (e.g., Private Pilot Airplane or Commercial Pilot Airplane), along with common errors related to that task.
  - The Instructor ACS thus refers to, but does not directly incorporate, Areas of Operation or tasks that the applicant is expected to teach from one of the "foundational" ACS documents.
- The *Risk Management* section requires the applicant to demonstrate the ability to both teach the risks arising from the elements of the referenced task in the foundational ACS, as well as manage the "instructional risks" arising from the specific training activity. (Note: An ongoing revision to the *Aviation Instructor's Handbook* (FAA-H-8083-9A) will address risk management, both in terms of teaching these concepts to applicants and in terms of managing the risks inherent in flight training.
- The *Skill* section requires the applicant to exhibit the ability to demonstrate and simultaneously explain the task, as well as to

analyze and correct simulated common errors drawn from the Knowledge section.

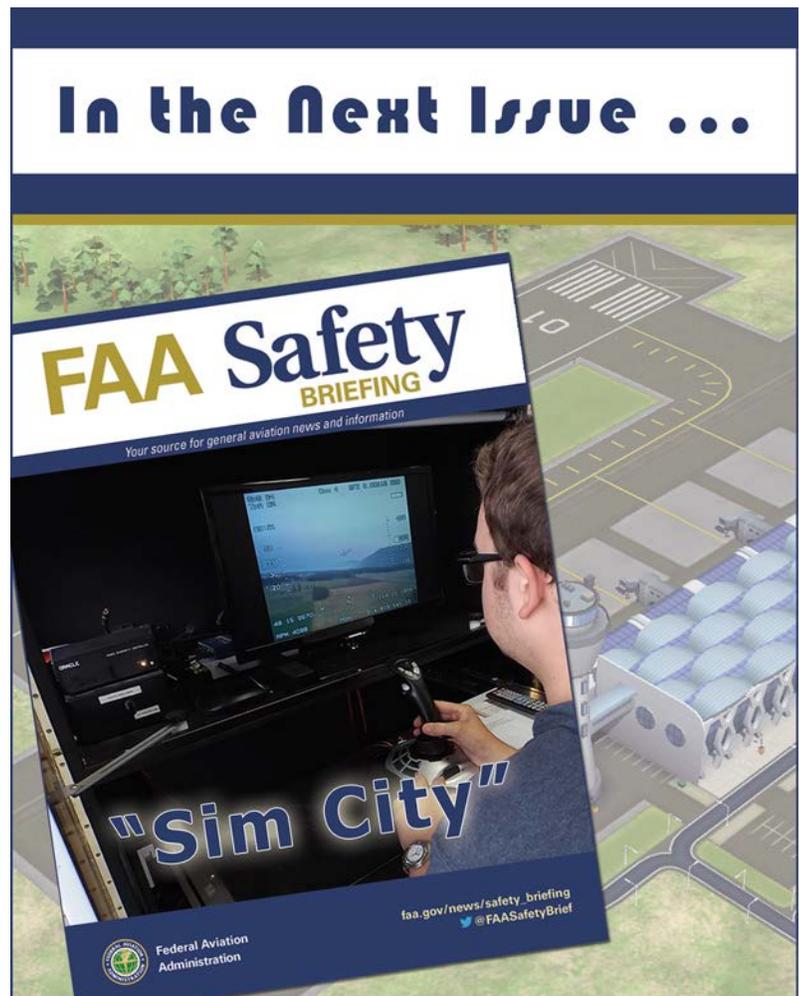
In order to evaluate the effectiveness of this approach, the FAA will support the ACS Working Group's plans for "tabletop prototype" review of the draft beginning in autumn 2017. Stay tuned! ✈️

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*To receive ACS updates, please subscribe to the FAA website's Airman Testing page ([www.faa.gov/training\\_testing/testing](http://www.faa.gov/training_testing/testing)) by clicking on the "subscribe" link in the upper right hand corner.*

*Do you have a question not addressed on the Airman Testing page? Do you have suggestions for improving the ACS? If so, please contact the ACS Focus Team at [9-AVS-ACS-Focus-Team@faa.gov](mailto:9-AVS-ACS-Focus-Team@faa.gov).*



# Flight Instructor Resources

*Your Guide to Lifelong Learning*

JENNIFER CARON



**W**ho has the most important job in aviation? Many would argue it's the flight instructor. He or she has the leading responsibility to impart the knowledge, skills, and attitudes fledgling pilots will need in order to operate safely in the National Airspace System (NAS).

Knowledge in particular is a hugely dynamic thing in the aviation industry — nothing stays the same for very long. In order to provide learners with both (a) the up-to-date knowledge, skills, and abilities, and (b) the desire and aptitude to be the lifelong learners that they must be, the instructor has to set the example by being a lifelong learner as well.

Keeping up may seem daunting, but this article presents some resources for you and the pilots you teach.

## FAA Resources

### *Airman Testing*

The FAA's Airman Testing page ([www.faa.gov/training\\_testing/testing](http://www.faa.gov/training_testing/testing)) is an online resource for certification requirements and airman knowledge testing. There you can find testing resources such as the Airman Certification Standards (ACS), practical

test standards, and reference handbooks. Topics that contain new and revised material are featured in the "What's New and Upcoming in Airman Testing" section, located at the bottom of the page. Subscribe to receive email notifications, updates to new information and material, and much more.

### *The WINGS Pilot Proficiency Program*

Reviewing and refreshing your knowledge is just as important as actual flying. The WINGS Pilot Proficiency Program is designed on the premise that pilots who maintain currency and proficiency in the basics of flight will enjoy a safer and more stress-free flying experience. Participation provides opportunities to help improve your skills and knowledge with online courses, seminars, and webinars.

Encourage pilots you train to participate in the program and take advantage of the wealth of information and proficiency training available. They can also benefit from the on-going training programs that provide opportunities for pilots-in-training to fly with a flight instructor. Many third party activities, such as those offered by pilot groups and organizations, qualify for WINGS credit. Check out the WINGS program at the FAA Safety Team's website, [faasafety.gov](http://faasafety.gov).

## Professional Organizations

Flight instructor organizations are great resources for continuing education, access to new flight training information, accreditation programs, resources and techniques for flight instruction, and the ability to network with flight training peers. Notable organizations geared to support the professional development of both independent and flight school-based instructors include the National Association of Flight Instructors (NAFI), [nafinet.org](http://nafinet.org), and the Society of Aviation and Flight Educators (SAFE), [safepilots.org](http://safepilots.org).

Pilot organizations such as the Aircraft Owners and Pilots Association (AOPA), [aopa.org](http://aopa.org), and the Experimental Aircraft Association (EAA), [eaa.org](http://eaa.org), bring like-minded aviators together for information and resources, and the promotion of general aviation. These and many other organizations provide instructors and pilots-in-training with access to speakers and aviation experts, workshops, and webinars. Some also offer discounts on trade publications to keep you up to date on the latest pilot techniques, tips, and advances in aviation technology.

Groups like the EAA/IMC and EAA/VMC Clubs provide opportunities for instructors and pilots from a wide range of aviation interests and backgrounds to share knowledge, learn and discuss different ways to approach flight scenarios, promote safety, and improve decision-making skills in both IMC and VMC flight conditions. The club's founder, Radek Wyrzykowski, is an instrument and multi-engine flight instructor who started the clubs as an opportunity for pilots to exchange practical experience and knowledge in a group setting. Members bring real-life, in-flight scenarios for group discussion and input on new ways to approach unexpected events during flight.

"These scenarios are not what you'd read about in any book," explains Wyrzykowski. "It's an exercise to develop a thinking process — everyone learns from group interaction. It also provides a great opportunity for pilots to promote safety and build proficiency in instrument and visual flying," says Wyrzykowski. Located at GA airports throughout the United States, these clubs are EAA proficiency programs that you can find at [eaa.org/imclub](http://eaa.org/imclub).

## Type Clubs

Type clubs enable instructors, pilots, and pilots-in-training to connect with professionals and enthusiasts interested in a particular type or brand of aircraft. If available, consider joining a type club

to learn more about the specific airplane you're using for flight instruction. Point your pilots to this resource as well to pick up additional skills in the aircraft they're flying now, or to find information about transitioning to another airplane.

## Guiding Principles for Instructors

The Aviators Model Code of Conduct advocates safer operating practices for instructors, and the entire aviation community. Visit their website at [secureav.com](http://secureav.com).

## New and Updated Regulations

Keep up to date with the evolution of GA, new information, and updates to existing regulations in the NAS. Visit [faa.gov/regulations\\_policies](http://faa.gov/regulations_policies) often for new and revised regulations, and subscribe to updates on Airworthiness Directives (ADs) and Special Airworthiness Information Bulletins (SAIBs) at [service.govdelivery.com/accounts/USFAARGL/subscriber/new](http://service.govdelivery.com/accounts/USFAARGL/subscriber/new). Pass the information along to your pilots as well.

Here's some important information, updates, and new regulations you need to know.

### *New English Language Proficiency Standards*

Just released on June 2, 2017, Advisory Circular (AC) 60-28B changes the English language proficiency testing procedures for student pilots. English language proficiency, as per the new FAA Aviation English Language Standards (AELS) must be evaluated before any student pilot applications, endorsements, or additional ratings are issued. These changes resulted, in part, in response to findings that poor communication is often a contributing and causal factor in aviation accidents. Visit [go.usa.gov/xN7RP](http://go.usa.gov/xN7RP) to take a look at the requirements in AC 60-28B.

### *BasicMed — An Alternative to the Third-Class Medical Certificate*

Pilots can exercise student, recreational, and private pilot privileges in certain small aircraft without holding a current medical certificate. AC 68-1A outlines the required medical education course, medical requirements, and aircraft and operating restrictions that pilots must meet to act as pilot in command (PIC) for most Title 14 part 91 operations. See [faa.gov/go/BasicMed](http://faa.gov/go/BasicMed) for all the details.

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Photo by Jeff Smith

### ***Update to Currency Requirements and Guidance for the Flight Review and Instrument Proficiency Check***

An update to AC 61-98C, the flight review guidance, is due out later this year — keep a look out for it at [faa.gov/regulations\\_policies/advisory\\_circulars](http://faa.gov/regulations_policies/advisory_circulars). In the meantime, check out the helpful job aides found at the end of the AC in Appendices 2 through 9.

### ***Guidance for Transition to Unfamiliar Aircraft***

AC 90-109A provides guidance on the transition to any unfamiliar fixed-wing airplanes, including type-certificated and/or experimental aircraft, and provides information to flight instructors who teach in these airplanes. This AC can also help pilots develop the necessary skills and knowledge when transitioning aircraft types.

### **Lessons Learned from Civil Aviation Accidents**

Knowing the cause of an accident can help you, as well as the pilots you teach, to mitigate unnecessary risk. The FAA's Aviation Safety Information Analysis and Sharing System (ASIAS), [go.usa.gov/xRbg4](http://go.usa.gov/xRbg4), allows users to search an extensive warehouse of safety information compiled from accident and incident data. Click on the "Lessons Learned" tab to view the library of small airplane accidents, along with key safety information resulting from those aviation events.

### ***National Transportation Safety Board (NTSB)***

The NTSB conducts independent investigations of all civil transportation accidents, and is also an excellent source of information on the leading causes of GA accidents. The NTSB's aviation accident reports are available online at [go.usa.gov/xRbgW](http://go.usa.gov/xRbgW). After an aviation accident investigation is complete, a final description of the accident and its probable cause, along with its associated safety recommendations, are added to the report.

The NTSB also issues Safety Alerts to GA pilots and mechanics to highlight safety issues identified in recent accident investigations. You can find these important text and video alerts at [go.usa.gov/xRbgK](http://go.usa.gov/xRbgK).

### **Lifelong Learning**

Sharpen your own skills — pursue new certificates, ratings, or endorsements. Hangar flying is good — talk to other instructors, other pilots, and remember that you can also learn from your students. Being an effective lifelong learner is the key to enhance skills and proficiency for yourself and for the pilots you train.

You, the flight instructor, have the most important job in aviation. By inspiring, motivating, and educating fellow pilots to be the best they can be, you help provide a foundation for the safety of all users in the NAS. 

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## Communicating the Concept of Compliance

If you are an active flight instructor, regulations are among the many subjects the FAA expects you to teach to candidates for a certificate or rating, and to review with pilots who hire you for a flight review or an instrument proficiency check. Of course it's important to cover the applicable regulations in 14 CFR parts 61 and 91. Ideally, you teach this material by engaging the pilot with realistic scenarios rather than requiring a chapter-and-verse recital of the regulations themselves. Either way, though, you can't check the box and call it done until you have also covered the topic of compliance.

This magazine has provided extensive coverage of the FAA's Compliance Philosophy. Regular readers have also seen us discuss it frequently in terms of how Compliance Philosophy is now incorporated into everything the FAA does (e.g., BasicMed). For a quick refresher, though, here's a summary of the key compliance concepts.

### Bottom Line Up Front

Compliance is expected and required of everyone who operates in the National Airspace System (NAS). Compliance means following the rules, but it also requires taking proactive measures to find problems before they cause an accident or incident, use the most effective means to fix them, and monitor to ensure they stay fixed.

### Core Premises

The FAA believes that most people want to operate in compliance with the rules. Pilots don't approach the airplane trying to think of ways to break the rules; they intend to comply and they make efforts to do so.

Best intentions notwithstanding, human beings make mistakes. The FAA therefore recognizes that failure to comply most often arises from things like lack of training, lack of knowledge, diminished skills, or procedures not working well.

Some errors can have serious consequences, but the greatest safety risk in the NAS does not arise from a specific event or its outcome. Instead, the greatest risk comes from an operator who is unwilling or unable to comply with rules and best practices for safety.

That means that the FAA evaluates risk based on the pilot's *willingness* and *ability* to comply with safety standards. When a pilot is both willing and

able to comply, which includes open communication and cooperating in taking the steps necessary to get back to compliance, the best way to meet our safety goal is to use tools like training, education, or better procedures.

The FAA reserves the enforcement tool for cases involving someone who is unwilling or unable to comply. A pilot who is *unwilling* is someone who knowingly violates regulations, one who takes inappropriate risk, and/or one who does not cooperate or collaborate in the effort to find the problem and fix it in a sustainable way. A pilot who is *unable* is one who fundamentally lacks the skills or qualifications needed to comply with the rules.

Enforcement is a means to rehabilitate and bring those individuals or operators back into compliance — back into the category of those who are both willing and able to meet standards. If a pilot continues to be unwilling or unable, though, we use stronger enforcement to move that person out of the NAS.

### Expectations

The Compliance Philosophy approach includes the expectation and appreciation for self-disclosure of errors, and a recognition that compliance means operating according to both the letter and the spirit of the law.

The Learn More section below offers links to some of the resources that we encourage you to use and share in your instructional activities.

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### Learn More

**FAA Safety Briefing's Compliance Philosophy issue, Jan/Feb 2016**

[go.usa.gov/xNsH8](http://go.usa.gov/xNsH8)

**Compliance Philosophy brochure**

[go.usa.gov/xNsHN](http://go.usa.gov/xNsHN)

**Administrator Huerta's October 21, 2015 Aero Club Speech, Embracing New Thinking**

[go.usa.gov/xNsHR](http://go.usa.gov/xNsHR)

**FAA Safety Briefing's PAVEing the Way to Safety issue, Jan/Feb 2017**

[go.usa.gov/xNsHQ](http://go.usa.gov/xNsHQ)



SUSAN PARSON

# Teaching Technology

## Instilling the Right Aptitudes and Attitudes for Safety

Today's pilots benefit from an astounding array of technology, both portable and installed equipment, that vastly simplifies the process of flight management from start to finish. In the preflight arena, technology gives us all kinds of new tools for weather, performance, and route planning. These and other apps and gadgets can vastly enhance en route situational awareness of changing weather, planned-versus-actual performance, airspace and, through Automatic Dependent Surveillance-Broadcast (ADS-B) In, or Traffic Information Service-Broadcast (TIS-B) traffic. At the end of a flight, apps and other new tools provide new ways to not just log time, but also to thoroughly document both pilot and airplane performance.

Technology and automation applied to an actively-managed flight can magnify its safety and efficiency, but when applied to a non-managed flight, they can very efficiently get you into very big trouble. That's because regardless of how good they are, today's avionics and handheld devices do not have sufficient intelligence to do more than exactly what we command them to do. If we issue the wrong commands because of inattention or incomplete understanding of the technology, the flight will potentially go off track in every possible way.

With that in mind, it is clear that flight instructors have a critical role to play in teaching pilots — both first-time applicants for a certificate or rating, and recurrent training clients — on how to make safe and appropriate use of the technology at our disposal.

### **Knowledge is Key**

Improper understanding and/or poor management of technology can quickly get a pilot into trouble. I learned this lesson several years ago when my GPS programming mistake was about to command the autopilot into a 180 degree course change and a 1,000 nm deviation from the intended flight path. It seems I had wrongly selected the identifier for my intended destination, Augusta, Georgia (AGS), by accepting the system's presentation of AUG, which is the identifier for Augusta, Maine. The GPS didn't know the difference. The autopilot would have obediently pointed the nose in the opposite direction. I would have found myself confused and disoriented — “what's it doing?!” — while also doing some serious ‘splainin’ to an equally befuddled air traffic controller.

Knowledge and experience with each specific device is the key to avoiding this particular technology pitfall. A flight instructor is responsible for teaching not only the technology itself, but also for teaching the risks associated with its use while actively managing the risk inherent in instructional activity (especially one that involves any significant “heads down” time — more on that topic later). That means that both you and the pilots you teach need to know the equipment cold.

This process starts well before you climb into the airplane. When you teach the use of GPS moving map navigators, for example, consider assigning “box familiarization” homework that you will discuss during the preflight briefing. That homework should include both the manual and, if available, online simulators. Unless you already know the specific technology well, you need to do the same homework yourself.

Next comes the knowledge check. Before you go to the airplane, be sure that you both know how to navigate the mechanical structure (aka the “knobology”) and the library structure — that is, how to efficiently find and display the information you need for any given phase of flight. You and the pilot you are training need to know the gadget's normal and abnormal operations, so you can avoid those pesky and potentially dangerous “what's it doing now” situations. You need to know what the technology can do for you and, equally important, what functions are simply beyond its capability.

Another preflight tip is to clearly establish your game plan. As the instructor, you need to have, and brief, an instructional plan of action for the technology you intend to teach — activities, exercises, locations, etc. While you might improvise in later stages of training, skip the surprise factor for a pilot just starting.

It's also important to have some version of what our military friends brief as “knock-it-off,” which is a phrase that anyone in the exercise can use to immediately stop the action and reset. If you find yourself baffled, confused, or in any way uncertain about what the technology is doing, it's time to knock it off by turning it off to reorient yourself. That certainly applies to the autopilot, but it also includes panel-mount, hand-held, or tablet-based navigators if you don't understand where they are taking you, or if you have any doubts about the safety of the suggested course. Never forget that the magenta line, especially if coupled to an autopilot, can guide you direct to anywhere ... including direct through regulatory obstacles such as restricted/prohibited/controlled airspace, man-made obstacles, or natural ones such as terrain.

Another tip: Even if you don't have cause to trigger your knock-it-off plan, consider creating one so as to firmly instill this concept in the pilot you are training. An ancillary benefit to this technique is giving the pilot opportunities to hand fly, and to quickly resume control of the aircraft in unexpected situations and circumstances, such as a missed approach.

### **Heads Up; Eyes Outside**

I've heard moving maps described as both an eyeball vacuum and a time warp. From personal

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**Flight instructors have a critical role to play in teaching pilots — both first-time applicants for a certificate or rating and recurrent training clients — how to make safe and appropriate use of the technology at our disposal.**

experience, I can attest that both are true. Several years ago, I had just finished an enjoyable GA glass cockpit flight with an FAA colleague. During the postflight discussion, he made the following observation. “When it comes to programming the avionics, you know these systems as well as anybody I’ve seen. But you probably don’t have any idea how much time you spent heads-down. There was a lot of traffic out there today.”

That got my attention, which had admittedly been sucked into the vortex of the shiny multi-

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**Never let the airplane or its on-board technology do anything you don’t know about, or take you to any place your brain hasn’t already passed through.**

colored, whiz-bang gadgetry at my disposal. It was sobering to realize that, without even noticing, I had allowed all the pretty toys in the panel to distract my attention far

too much and for far too long from the serious business of see and avoid. I’ve never forgotten the lesson, nor have I ceased to mentally replay my colleague’s cautionary comment whenever I fly.

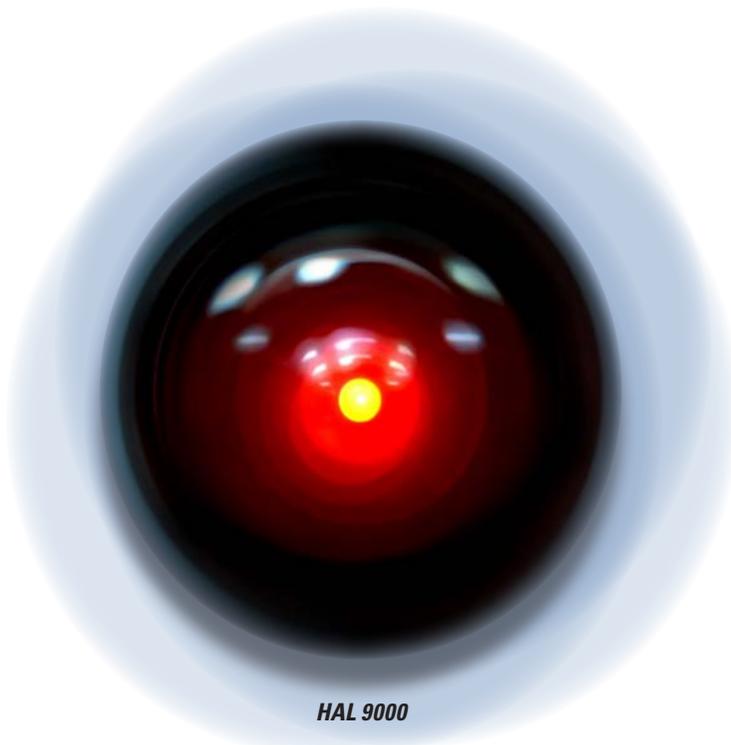
As I began to instruct more frequently in glass cockpit aircraft, I noticed that the eyeball and attention vacuum effect of the glass panel technology was not unique to me. My fellow pilots similarly fixate not just on periodic programming requirements, but also on monitoring the myriad bits and bytes of flight information on the various glass cockpit displays.

In an effort to offer them the kind of awareness my colleague gave me, I sometimes used a stopwatch to provide very specific feedback on how long they really spend in the technological time warp. The attraction to technological distractions is even greater now that so many of us have acquired extremely capable tablets stocked with equally capable flight planning, managing, and monitoring apps.

Yes, TIS-B and the growing proliferation of ADS-B equipped aircraft will certainly help with traffic spotting. Still, please don’t allow pilots you train to lose the see-and-avoid habit.

### **Who’s In Charge Here?**

Our highly capable gadgets tempt us to shirk not only our see-and-avoid responsibilities, but also a vast swath of the flight management work. They lull us away from the discipline of critical thinking and true situational awareness, a term that implies far more than a position check on the moving map. When teaching technology, therefore, instructors need to instill habits that will keep pilots in control and in the loop.



**HAL 9000**

Let’s start with control. If you have ever watched *2001: A Space Odyssey*, you will remember the story of the spacecraft’s domineering computer, HAL 9000. HAL asserts that he is “foolproof and incapable of error.” At least initially, the crew is content to believe in HAL’s infallibility and let their computer run the show. Even if you haven’t seen the movie, you can probably guess that this decision leads to a bad end.

There is certainly astonishing capability and reliability in today’s technology. Tablet flight management apps and panel-mount GPS moving map navigators provide an enormous range of information. Even the most modest GA autopilots can often manage stick and rudder duties far more smoothly than many human pilots. The problem is that we humans can be so beguiled by our electronic tools that we expect them to compensate for functions that we cannot, or choose not, to perform. We expect the technology to do not just the work, but also the thinking.

When we relinquish command and control functions to our on-board technologies, we implicitly delegate our PIC authority, and entrust our very lives, to mere machines. For that reason, one of the most important things to impart when you are teaching technology is that delegating the PIC role to on-board equipment provides a VFR-direct path to loss of situational awareness. As the instructor, you thus need to stress how both safety and good airmanship require the pilot to retain the role of PIC, and keep the technology under firm control. Never let the airplane or any of the on-board technology do anything you don’t know about, and — as the cliché

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reminds — never let the airplane or any of its high-tech equipment take you to any place your brain hasn't already passed through.

Now let's talk about staying in the loop.

To me, one of the great ironies of today's technological capability is that pilots can often be less aware of position than ever before. Here's why. When I was a student pilot making my solo cross-country flights in a C152 with only a single nav/com radio, my fear of getting lost motivated a near maniacal focus on positional and situational awareness. In addition to double-, triple-, and quadruple-checking the VOR frequencies and courses, I used pilotage to ensure that I could constantly match features on the ground passing below me to the proper location on my well-worn paper sectional chart.

GPS provides a much more precise position indication than anything I could have calculated in the pre-moving map Stone Age. Ironically, though, the advent of at-a-glance position awareness capability has sharply diminished the "where-am-I-now" discipline that was the hallmark of being in the loop. When you don't have to put any mental effort into ascertaining positional awareness or, if you use an autopilot, actually flying the airplane, it's easy to stop paying attention.

As the instructor, you therefore need to teach techniques to help pilots stay in the loop. The act of speaking and writing bolsters awareness, so you might require them to do things like consistently use callouts to maintain positional awareness (e.g., "crossing WITTO intersection, next waypoint is MITER intersection"); announce changes to heading, altitude, and frequency; record those changes in an abbreviated navigation log; announce any change to navigation source (e.g., "switching from GPS to VLOC") and autopilot modes; and read each item on the autopilot status display aloud every time there is a change, stating which modes are armed and which modes are engaged.

Today's technology provides the foundation for an unprecedented level of situational awareness. For everyone's benefit, please teach your pilots to use it wisely and well. 

*Susan Parson (susan.parson@faa.gov, or @avi8rix for Twitter fans) is editor of FAA Safety Briefing. She is an active general aviation pilot and flight instructor.*

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# Renewing Your “Lease”

## Options for Flight Instructor Certification Renewal

Whether you pursue the noble profession of flight instruction full time, or have been an aviation educator sometime earlier in your career, every flight instructor is keenly aware of the intrinsic value of the flight instructor certificate. Not only can it be an invaluable asset towards accumulating flight time, aeronautical experience, and personal income, it's also considered (at least anecdotally) one of the most challenging practical exams to pass. However, there is another key difference that sets this certificate apart from other airman certificates earned — an expiration date.

Unlike a private pilot certificate, for example, a flight instructor certificate is valid only for 24 calendar months after an initial certification ride or renewal. In order to retain your flight instructor privileges, you must keep that certificate current and continue to renew, or else take another practical test unless you simply choose to let it expire. Thankfully,

there are several options to help you renew your certificate (and refresh your aeronautical knowledge). This article will explain each one in detail.

### The Regs

To learn more about the renewal requirements for flight instructor certification, the best place to start is with Title 14 Code of Federal Regulations (14 CFR) section 61.197. This regulation lists five methods you can use to renew your flight instructor certificate if it has not expired. These five methods must be accomplished during the preceding 24 calendar months of expiration. In summary, they are:

1. Pass a practical test for a new instructor rating or for any rating on your current flight instructor certificate;
2. Endorse at least five students for a practical test, with 80 percent passing on the first try;

3. Show that you are in a position to regularly evaluate pilots or served as a company check pilot, chief flight instructor, company check airman, or flight instructor with a part 121 or 135 operator;
4. Successfully complete an approved flight instructor refresher course (FIRC); or,
5. Pass an official U.S. Armed Forces military instructor pilot proficiency check.

One important point worth reinforcing before we get into the details: a person cannot renew a flight instructor certificate that is already expired. So if your 24-calendar month eligibility window has elapsed, your only option to reinstate your certificate is to pass a practical test.

### **FIRC-gettaboudit**

For a majority of flight instructors who are inside that 24-calendar month window, the FIRC route to renewal is by far the most popular. In fact, it's estimated that 70 percent of the roughly 30,000 active flight instructors use this option to renew. The reasons for a FIRC's popularity vary, but most cite convenience and education quality as draws. Some FIRC providers have received authorization to provide their content online — an attractive feature for some who may live in more remote areas or whose schedule conflicts with the typical weekend classroom offering times.

Regardless of the format, FIRCs are held to a strict set of criteria that includes at least 16 hours of course curriculum, testing standards, and a series of required core topics that all providers must cover. According to Advisory Circular 61-83H, *Nationally Scheduled FAA-Approved, Industry Conducted Flight Instructor Refresher Course*, FIRC programs should aspire to “challenge, motivate, and inspire attendees” as well as present meaningful information designed to help CFIs carry out their role more effectively. Recent updates to the AC helped clarify these standards further and have added a vital new core topic, loss of control.

To view AC 61-83H, follow the link in the Learn More section of this article. It covers everything you'll want to know about a FIRC. I also recommend reviewing the article, “FIRC: A New Look at a Familiar Program” in the September/October 2012 issue of this magazine at <http://1.usa.gov/Ob30H7>.

One last pointer about using FIRCs: you can use them to renew anytime during your 24-month currency window. To keep your same calendar month expiration date, though, you need to submit the FIRC

graduation certificate within three calendar months preceding the month of expiration. That gives you some breathing room leading up to your expiration month to schedule and attend a FIRC.

To offer an example, if a person whose current flight instructor certificate expires on October 31, 2017, seeks to renew his or her certificate through a FIRC and obtain a new expiration date of October 31, 2019, that person must present the FIRC graduation certificate to an Aviation Safety Inspector (ASI) on or after July 1, 2017. Submitting before that date will result in an expiration date calculated from the date you completed that FIRC.

Note that the three-calendar-month window is computed from the first day rather than the last day of the expiration month of the current flight instructor certificate. Therefore, if a person's flight instructor certificate expires on October 31, 2017, the three-calendar-month window is computed from October 1, 2017.

### **Aviator Evaluator**

For flight instructors who have regular students, or whose position allows them to regularly evaluate other pilots, renewal options 2 or 3 from the earlier list (listed as (a)(2)(i) and (a)(2)(ii) in the 61.197 regulation) will likely be your go-to choice. For the latter, the FAA has updated the regulation to expand the renewal provisions and provide more clarity on the role of flight instructors who are “in a position involving the regular evaluation of pilots.” This list includes company check pilots, chief flight instructors, company check airmen, or flight instructors in a part 121 or part 135 operation. The FAA further acknowledges that PICs who regularly evaluate pilots have the same option. Eligible PICs may include:

- A PIC of a multiple pilot flightcrew aircraft under part 135,
- Corporate PICs of a multiple pilot flightcrew aircraft under part 125 or part 133,
- U.S. military pilots who are PICs of a multiple pilot flightcrew aircraft,
- U.S. military instructor pilots and examiners who regularly evaluate pilots.

### **Practically Speaking**

Another renewal option for flight instructors is to pass a practical test for a new instructor rating or

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**Unlike a private pilot certificate, a flight instructor certificate is valid only for 24 calendar months after an initial certification ride or renewal.**

for a rating already on your flight instructor certificate. To add another rating to your flight instructor certificate, you must have the category and class rating on your pilot certificate. This option, although not as popular as some of the other renewal methods, is sometimes misinterpreted. For starters, to have a practical test renew your flight instructor certification, it has to be with a rating already listed on your flight instructor ticket, or towards an additional instructor rating.

For example, if you do not have an airplane category multi-engine class rating on your flight instructor ticket and pilot certificate, then passing an airplane category multi-engine class rating practical test for your pilot certificate would *not*

renew your instructor certificate — although, incidentally, this would satisfy your flight review requirements in 14 CFR section 61.56. It's important to also note that taking a practical

test for any one rating on your instructor certificate or adding a rating to that certificate, renews *all* of your instructor ratings. Similarly, if your instructor certificate has expired, taking a flight instructor certification checkride for any one rating held on your certificate will also reinstate *all* ratings on your instructor certificate (see 14 CFR section 61.199). Previous regulatory language in each of these areas may have given the impression that an applicant had to take a practical test for each of the ratings listed on their flight instructor certificate to either renew or reinstate. Happily, that is not the case.

Flight instructors renewing by practical test should also be aware that the test may be accomplished in a flight simulator or flight training device, provided it's done in accordance with an approved course conducted by a part 142 certificated training center (see section 61.197 (c)). Finally, for those who go the military route to renew with a military instructor pilot proficiency check, the process is pretty straightforward. It's a good idea however, to make sure you have documentation that is acceptable to the FAA to facilitate your renewal.

### Spread Your WINGS

Although not listed in 14 CFR section 61.197, there are a couple additional methods flight instructors can use to renew their certificates. The reference for these is the guidance contained in

FAA's 8900.1 Order (specifically Volume 5, Chapter 2, Section 11), which covers certification of pilots and flight instructors. One option allows current flight instructors to renew if they serve as a flight instructor in the FAA's WINGS Pilot Proficiency Program and meet certain program criteria, such as evaluation of at least 15 WINGS-accredited flight activities with at least five different pilots within the 24 months preceding certificate expiration. AC 61-91J contains more on these requirements and is available at [go.usa.gov/xNsF2](https://go.usa.gov/xNsF2).

Another option in the 8900.1 guidance document allows a current flight instructor to renew his or her certificate once designated as a Master Certificated Flight Instructor by the National Association of Flight Instructors (NAFI). To view more details, you can reference the 8900.1 Order directly at <https://go.usa.gov/xNsMD>.

### Covering Ground

We've talked thus far about options flight instructors can use to renew their certification, but how about ground instructors? A ground instructor certificate does not expire, but to perform ground instructor duties, you must meet certain recent experience requirements, some of which overlap from the flight instructor realm. According to 14 CFR section 61.217, a ground instructor can remain current if they show one of the following occurred in the preceding 12 calendar months:

- Employment or activity as a ground instructor giving pilot, flight instructor, or ground instructor ground training;
- Employment or activity as a flight instructor giving pilot, flight instructor, or ground instructor ground or flight training;
- Completion of an approved FIRC and receipt of a graduation certificate for that course; or,
- An endorsement from an authorized instructor certifying that the person has demonstrated knowledge in the subject areas prescribed for ground instructor eligibility requirements (14 CFR section 61.213(a)(3) and (a)(4)) as appropriate.

### The Certificate's in the Mail

So now that you've met the renewal requirements for your flight instructor certificate, how do you go about processing your new certificate? There are several options, but the one you use is most likely driven by the renewal method chosen. For example,

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**Regardless of the format, FIRC's are held to a strict set of criteria that includes at least 16 hours of course curriculum, testing standards, and a series of required core topics that all providers must cover.**



at many in-person FIRC's, an Airman Certification Representative will be available on-site to process your graduation certificate for a fee, submit your renewal application online, and in some cases, offer you a temporary flight instructor certificate. Designated Pilot Examiners can also process your application after a successful practical test. Candidates for flight instructor renewal may also visit the local Flight Standards District Office or simply submit the application via U.S. Mail.

If you choose to mail it in, be sure to follow the guidelines contained in paragraph 5-504 of the aforementioned 8900.1 Order. Special requirements for mail-ins include submitting your permanent flight instructor certificate and, if applicable, notarizing any relevant training records. A copy of your old instructor certificate will suffice until your new one arrives.

### **Above and Beyond**

Suffice it to say, being a good flight instructor goes beyond just staying current in accordance with

the regulations. It involves being actively involved in the aviation community and striving for a better understanding of, well, everything! It should also behoove a flight instructor, especially one actively instructing, to stay informed and up to date with regulation changes or technological innovations, as well as better methods of inspiring and motivating students to learn. ✈️

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

### **Learn More**

**Advisory Circular 61-83H, Nationally Scheduled FAA-Approved, Industry Conducted Flight Instructor Refresher Course**

[go.usa.gov/xNsug](http://go.usa.gov/xNsug)

**AC 61-91J, WINGS Pilot Proficiency Program**

[go.usa.gov/xNsF2](http://go.usa.gov/xNsF2)



# Shifting Gears

Photo by Tom Hoffmann

## *Tips for Tackling Transition Training*

*(Editor's Note: This article originally appeared in the Mar/Apr 2014 issue of FAA Safety Briefing magazine. We offer an updated version in this instructor-focused issue.)*

In the flight school where I worked as a part-time instructor some years ago, it was common to assign newly-certificated instructors to flights deemed less challenging than training for a certificate or rating. Intuitively, it made sense. Rather than pairing a completely novice instructor with a completely novice trainee, the school would initially assign flight-seeing jaunts, introductory flights, flight reviews, and rental checkouts to newbies in order to give us an opportunity to get accustomed to the right-seat role.

That's why on one fine autumn day, I was on the schedule to conduct an aircraft rental checkout in one of the school's single-engine Cessna aircraft. The client was a genial, recently-retired airline pilot anxious to get back in the sky.

His credentials and qualifications were impressive — and somewhat intimidating to a newbie like me. I could not imagine that I could possibly teach him anything about aviation, and it seemed arrogant even to try. As I reviewed his neatly-completed paperwork, I realized that I didn't even need all the fingers on one hand to count the number of aircraft types I had flown. My client, on the other hand,

didn't have enough room on the school's standard checkout sheet to list all of his. My total time was a very modest three-digit number. His was somewhere north of 20,000 hours. Sure, most of that flight time, and all of his most recent hours, were logged in heavy metal. Still, he and I both approached his single-engine Cessna checkout with more than a little of the "how-hard-can-it-be" mentality.

You know where this story is going, right? The sight picture, speeds, and power settings that had become second-nature from his long airline career simply did not work in a light GA aircraft. Suffice it to say that he and I were both surprised and humbled by the experience. The first landing qualified as "great" only because we were both able to walk away from an airplane that could be flown again without a visit to maintenance.

### **Up, Down, or Over?**

As you might imagine, this early experience taught me several important lessons. The most important was to never, ever make assumptions on how previous training and experience might translate to a different aircraft.

Another lesson involves perspective. When we think about transition, pilots often focus more on what we perceive as moving "up" in the aircraft taxonomy. With more capable aircraft, we naturally expect

to invest considerable time and effort to master the machine by understanding its avionics, its systems, its performance, and its handling characteristics.

Too often, though, we tend to give short shrift to the idea of moving “down” to an aircraft that appears deceptively simple to operate. Here’s the trap. To assume that moving down is always less demanding is every bit as inaccurate — and dangerous — as responding to the intuitive sense of up and down that can lead pilots to mishandle an aerodynamic stall. As Northrop test pilot Max Stanley famously noted:

*The J3 Cub is the safest airplane in the world; it can just barely kill you.*

Any pilot who has transitioned from a standard category airplane to a light sport aircraft (LSA) will attest to the very real challenges involved in moving to a lower-performance airplane. In addition to being less capable in weather and possibly less robustly equipped, some LSAs have very different handling characteristics that can bite the unwary or ill-prepared pilot.

The bottom line is that whether moving to a more capable aircraft or to a simpler machine, every bird we fly deserves, and indeed demands, the utmost level of respect from its pilot. For that reason, we would do well to banish the notions of “up” and “down” when it comes to aircraft transition, except to the extent that we focus on the correct way to make a particular aircraft properly go up on takeoff and smoothly come down again for landing. To establish a more appropriate mindset, think of it instead as moving on or over to a different aircraft.

### Transition Training Trifecta

Any kind of aircraft transition demands appropriate training. The specifics for such training are rigidly prescribed in the air carrier world, but what constitutes proper transition training for GA? Whether the pilot is transitioning to a higher- or lower-performance aircraft, or even a different model, a sound transition training program should involve:

- **Structure:** Transition training should be conducted in accordance with a written training syllabus. Think of the syllabus as a checklist for training. As with an aircraft checklist, the syllabus provides a logical, systematic, and comprehensive approach to ensuring that you cover all the basics. It is also helpful to review the applicable Airman Certification Standards (ACS) or practical test

standards (PTS), which list the performance metrics appropriate for the certificate and/or rating that the transitioning pilot holds.

- **Specifics:** Transition training is intended to teach the pilot what is different about the aircraft or its installed equipment (e.g., avionics). The syllabus should thus address basic characteristics of the aircraft’s systems (e.g., fuel, electrical, control, hydraulic, avionics, environmental, etc.), but with emphasis on how characteristics of the new aircraft differ from those in aircraft the pilot has already flown. It should cover normal, abnormal, and emergency procedures.

The syllabus should cover performance characteristics, to include takeoff and landing, climb, cruise, descent, and glide. Finally, it must address limitations, such as weight and balance, speeds, and kinds of operations (e.g., landing surfaces, maximum demonstrated crosswind component).

- **Qualified Instructor:** To get the greatest benefit from your transition training, a pilot needs to hire an instructor who is current, qualified, and thoroughly knowledgeable

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**We would do well to banish the notions of “up” and “down” when it comes to aircraft transition. To establish a more appropriate mindset, think of it instead as moving on or over to a different aircraft.**

Photo by James Williams



about the airplane and/or equipment you want to master. If a pilot approaches you for help, do everyone a favor and be honest about your experience and your capabilities. If you do deem yourself qualified to take the job, you need to conduct the training in accordance with a comprehensive training syllabus. While it is important to cover all the

**Whether moving to a more capable aircraft or to a simpler machine, every bird we fly deserves, and indeed demands, the utmost level of respect from its pilot.**

material, remember that you may need to modify the arrangement of the subject matter and/or shift the emphasis to fit the transitioning pilot's qualifications and goals, the characteristics of the aircraft or equipment involved, and the circumstances of the training environment.

### What About Experimental?

If your pilot is making the transition to an experimental airplane, you will find a great resource in FAA Advisory Circular 90-109A, *Transition to Experimental or Unfamiliar Airplanes*. While not intended to address testing of newly-built experi-

mental airplanes, AC 90-109A provides information and guidance to owners and pilots of experimental airplanes, as well as to flight instructors who teach in these airplanes. AC 90-109A provides recommendations for training experience in a variety of groupings based on performance and handling characteristics.

As the AC's introduction notes, pilots making the transition to any unfamiliar fixed-wing aircraft (including type-certificated airplanes) can also benefit from the information and guidance provided in this document, which includes tips on hazard identification and risk mitigation strategies.

Regardless of the nature of the transition, any pilot moving to an unfamiliar aircraft needs to use a transition training strategy appropriate to the airplane or equipment in question. ✈️

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### Learn More

**Advisory Circular 90-109A, Transition to Experimental or Unfamiliar Airplanes**  
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Photo by James Williams

# A Different World

## *The Transition from Military to Civilian Flight Instructor*

**W**hen we talk about aviation transition training, we are usually referring to a change in the type of aircraft we are flying. We could be thinking about the change from a single engine to a multi-engine, or maybe the transition from a tricycle gear airplane to a tail-dragger. In other words, we think of transition training in reference to different equipment. But what about training the pilot to operate in a different world?

### **From Forward Operating Base to Fixed Base Operator**

Not all flight instructors are created equal. This is not a comment on the quality of certain instructors, but rather on the different regulatory mechanism used to issue their certificates. Specifically, in 2009, the FAA changed Title 14 Code of Federal Regulations (14 CFR) part 61 to allow military instructor pilots or pilot examiners to be issued a flight instructor certificate under section 61.73(g), by presenting documentation of their military instructor or examiner qualifications and passing a Military Competence Instructor (test code

MCI) knowledge test to their local Flight Standards District Office (FSDO). The military instructor pilot or examiner must also hold a commercial pilot certificate with an instrument rating (which can also be obtained via the provisions for current or former U.S. military pilots in section 61.73). Once this process is complete, the military pilot holds a certificate to instruct.

Done, right? Not so fast. If you are a current or former military pilot, are you really ready to teach in the civilian world? The answer might be no. This transition is from one world to another. There are different rules and, in some cases, different procedures. So how do you ensure there are no gaps between your military skills and what you'll need to succeed in your new civilian role?

### **Training for the Transition**

When it comes to the nuts and bolts, a military instructor is probably pretty close to ready. Flying and teaching skills are most likely top notch, but not all military instructors have experience with civil aviation. Let's look at some ways you can fill in the gaps.

Most training courses offered for the MCI knowledge test are based on preparing you for the test. That's good, but if you've earned your wings in the military and advanced to the point of being a military instructor or examiner, you can probably handle an FAA knowledge test. The bigger question is how to prepare for the different type of flying you'll be doing. The FAA website (faa.gov) offers a great deal of helpful information. A good place to start is the Aviation Handbooks and Manuals section (faa.gov/regulations\_policies/handbooks\_manuals/aviation), particularly the *Aeronautical Information Manual*, *Airplane Flying Handbook*, *Helicopter Flying Handbook*, and *Aviation Instructor's Handbook*. You don't necessarily need to read these publications cover to cover, but a scan might help you find sections that will be relevant to instructing in the civilian world.

Next, find an instructor for a "civilian checkout." A few hours of ground and flight time with an experienced instructor can help you get a better grasp of civilian aviation, as well as help you get acquainted with GA aircraft you may not have had a chance to fly. An experienced instructor can also help you identify areas needing further attention.

To find such an instructor, check out the resources that professional organizations can offer. Both the National Association of Flight Instructors (NAFI) and the Society of Aviation and Flight

Educators (SAFE) include active and experienced instructors. Both offer mentor and professional development programs that can be very useful. Type clubs and proficiency programs are another resource, and can be particularly helpful if you know you will be teaching in a specific type of airplane.

Also, don't forget about the requirements of the CFRs. 14 CFR section 61.195, *Flight Instructor Limitations and Qualifications*, lists requirements that all flight instructors must comply with, no matter how they received their flight instructor certificates. Some of these requirements involve items such as how much instruction they can provide in a single day, requirements for providing instruction in multi-engine airplanes or in a helicopter, along with restrictions of when you can teach someone who is trying to become a flight instructor for the first time. Make a thorough review of the regulations part of your transition training.

With the right amount of preparation, you can greatly improve your chances of a successful transition from a military to a civilian flight instructor. The key ingredient to that transition is ensuring you add a

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[1.usa.gov/18ioRba](http://1.usa.gov/18ioRba)

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#### FAA Airmen Certification

[1.usa.gov/1zduw7I](http://1.usa.gov/1zduw7I)

#### Society of Aviation and Flight Educators (SAFE)

[safepilots.org/programs/mentoring-program](http://safepilots.org/programs/mentoring-program)

#### National Association of Flight Instructors (NAFI)

[nafinet.org](http://nafinet.org)



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## Don't Be Fooled

### *A Balloon Maintenance Inspection Can Be Tricky*

Have you heard the old saying, “if it looks like a duck, quacks like a duck — it’s a duck?” Then you probably know the rest of the saying — “but alas, it’s not really a duck!”

Unlike an airplane inspection, a hot air balloon inspection can be quite a different animal. At first glance, the balloon as a whole may appear to be approved and airworthy, but upon closer inspection of each of the balloon’s parts, you may discover that not everything is what it seems.

Although a balloon has just three main parts — the envelope that holds the air, the fuel burner that heats the air to provide lift, and the basket that holds the passengers — each part is detachable, and some of these parts are even interchangeable from one balloon to the next. Some parts may be manufacturer approved, and some may be unapproved and/or substituted from other balloons.

For example, a balloon might have a manufacturer-approved envelope, but its burner has unapproved parts from the local home improvement store (in violation of 14 CFR part 43), and the basket, substituted from another balloon, is not in conformance with the balloon’s type certificate, and therefore not approved for use on that particular model.

Don’t be fooled. You must inspect each and every part of a hot air balloon, as a complete and undivided unit, every time you perform an annual or 100-hour inspection. Follow these three steps as a guide to ensure the balloon is airworthy and approved for return to service.

#### **Step 1: Inspect the Entire Balloon**

A balloon is an aircraft, and just like most aircraft it must be constructed, certificated, maintained, and operated in accordance with 14 CFR parts 43, 61, and 91. Every balloon must have an annual inspection, and if used for commercial purposes, an additional inspection after each 100 hours of flight.

You can find the inspection requirements in the manufacturer’s Continued Airworthiness Instruction Manual to review the initial type certification for the envelope, the burner, the basket, each fuel tank, cable, panel, and instrument.

Be sure to check any previous preventive maintenance performed on each of these components. Under part 43, if the balloon owner or pilot holds at

least an FAA private pilot certificate with a balloon rating, issued under part 61, he or she can perform preventive maintenance on their balloon, such as patching small tears in the envelope or replacing any broken wicker on the basket.

“Make sure that the repairs are done properly,” advises Jim Malarsie, supervisory aviation safety inspector in the FAA’s Albuquerque Flight Standards Division Office (FSDO). Malarsie has performed countless balloon safety inspections, and he recommends careful examination of all preventive maintenance work. “Any preventive maintenance must use the parts or materials approved by the manufacturer or FAA,” Malarsie explains.

#### **Step 2: Verify the Manufacturer’s Original Equipment Data**

Did you know that if it’s designated in the balloon’s Type Certificate Data Sheet (TCDS), an owner/operator can interchange any basket and burner, designed for quick removal and installation, onto any other balloon envelope?



Photo by Tom Hoffmann

“Just be aware that you can come across a balloon with a logbook entry showing an annual inspection on the entire balloon, but when you take a closer look at the serial numbers, the basket is an interchanged item, and it hasn’t been inspected for years,” cautions Malarsie.

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**It is critical to confirm that the equipment you are inspecting matches up with the part numbers, serial numbers, and weights listed in both the balloon logbook and the balloon flight manual.**

It is critical to confirm that the equipment you are inspecting matches up with the part numbers, serial numbers, and weights listed in both the balloon logbook and the balloon flight manual.

The flight manual contains a list of the manufacturer’s original equipment (OEM) parts. The original parts and components are also itemized in the balloon’s logbook.

Don’t forget to check the balloon’s maintenance record as well to insure compliance with each applicable service bulletin and airworthiness directive.

### Step 3: Follow the Type Certificates

As with any aircraft inspection, if you discover equipment or parts not listed in the type certificate (TC), check the balloon’s logbook for any supplemental type certificates (STCs), major repairs, or alterations.

Keep in mind that as technology advances, balloon pilots are eager to install the latest and greatest gizmos and gadgets, but may not realize that these newfangled electronic parts are not manufacturer-approved for that model of balloon.

The infrared temperature gauges are a prime example. Pilots use this device to monitor a balloon’s

temperature variations with infrared imaging.

“We’re seeing infrared instruments in balloons, but if the manufacturer has not approved these electronic systems, you can’t just arbitrarily put them on your balloon. The owner/operator is bound to the specifications in the type certificate,” explains Malarsie.

Check to ensure the balloon is using the correct components, as listed in the TC or the STC.

When in doubt, question the owner about any subsequent installations, and never hesitate to contact the balloon manufacturer directly to verify any installed equipment or parts.

### Trust but Verify

Perform your inspection on every part of the balloon and treat it as one, complete aircraft. Examine to determine whether the parts under inspection meet all applicable airworthiness requirements.

It may be airworthy after all — just keep in mind that not all balloons are what they’re “quacked” up to be.

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*Jennifer Caron is an assistant editor for FAA Safety Briefing. She is a certi-*

### Learn More

**Albuquerque FSDO**  
(505) 764-1200

**FAA Safety Team (FAASTeam) Balloon Resources**  
[bit.ly/2teWSUs](http://bit.ly/2teWSUs)

**FAA Balloon Handbook**  
[go.usa.gov/xRTpG](http://go.usa.gov/xRTpG)

*fied technical writer-editor, and is currently pursuing a Sport Pilot Certificate.*



Photo by Tom Hoffmann



## Flight Instructor Forums: A Formula for Success

*A teacher is a compass that activates the magnets of curiosity, knowledge, and wisdom in the pupils*

— Ever Garrison

In this flight-instructor-based issue, we've outlined scores of resources and tips instructors can utilize to help them provide quality instruction for their students. One such resource worth highlighting in greater detail is the FAA Safety Team (FAASafety) Flight Instructor Forums. Regarded as informative and highly interactive, these sessions provide an opportunity for flight instructors, ground instructors, designated pilot examiners, and the FAASafety Team to come together and discuss ways to enhance communication and standardization of the pilot training and evaluation processes. The forums are also structured to help attendees sharpen their skills as both an instructor and pilot.

The FAASafety Team hosts approximately 350 flight instructor forums throughout the year at locations across the United States. (To find one near you, simply check the Seminars & Webinars section of [faasafety.gov](http://faasafety.gov).) The events are typically two to three hours in length and are open to flight instructors of all types (airplane, balloon, glider, rotorcraft, etc.) as well as any and all aspiring instructors.

Content of the forums vary from year to year, but they are generally focused on instructor/student best practices and preventing loss of control (LOC) accidents. In line with that general theme, one of this year's forums will discuss a "top five" list of broad issues affecting instructors and their students today. These topics include:

- A discussion of Airman Certification Standards (ACS) — are they adequate to assess pilots' ability to operate safely?
- What works well with ACS, and what areas might need improvement?
- How can flight instructors help reduce the number of LOC accidents?
- What are the best practices to avoid pilot deviations and ensure safe, compliant operation in the NAS?

- A discussion and ranking of accident precursors in order of influence.

National FAASafety Team Product Manager John Steuernagle is particularly excited about the upcoming cycle of forums beginning in October of this year, which, unlike previous forums, will provide a mechanism for capturing best practices data during the event.

"This data will be collected and eventually shared with the flight instructor community in a report of findings," says Steuernagle, adding that the information will also serve as a basis for discussion during the 2018 flight instructor forums. In addition to promoting a more global perspective of best practices, the data collected will also help inform the FAASafety Team as to ways they can enhance or improve the forum.

Touting the program's interactive nature, Steuernagle likens the information flow at the forums to a two-way street. "We provide attendees the latest and greatest on national policy, guidance, and any pressing safety matters, while they give us helpful insight to any local issues that might affect how they operate. Questions, comments, and concerns are always welcome," he adds. Forum presenters will then forward this feedback to the FAA's local, regional, or national office resources as needed for follow-up.

If you've never participated in a FAASafety Flight Instructor Forum, or if it's been some time since you've attended one, consider adding it to your to-do list this fall. It's a great opportunity to learn something new as well as exchange ideas with the FAA and your fellow instructors. And — spoiler alert! — you might even have fun.

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

### Learn More

[FAASafety.gov's Seminars & Webinars page](http://FAASafety.gov's%20Seminars%20&%20Webinars%20page)  
[go.usa.gov/xNum3](http://go.usa.gov/xNum3)

## Helicopter Training at Airports

Helicopter flight instructors have a challenging job. Sometimes, finding a place to conduct your flight lesson can present its own challenge. With off-airport practice areas becoming scarce due to noise sensitive areas or county land ordinances

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**Regardless of which type of airport you use to conduct flight training, you must become familiar with all available information at that airport.**

prohibiting aircraft operations, many helicopter flight instructors find themselves using local airports to conduct much of their flight training.

There are many benefits to using an airport, such as prepared surfaces, taxiway markings for hover practice, runways to conduct rapid decelerations or autorotations, and even a ramp to shut down and take a break. Another benefit some airports may have is aircraft rescue and firefighting equipment. You may never need them, but it is nice to know they are there.

At an airport with an operating control tower, ATC can provide pilots with aircraft separation and an extra set of eyes while operating on the field. These controllers do a really good job of integrating helicopter training operations with other aircraft. Controllers can also accommodate pilot requests for services, but they operate on a first come, first serve basis. If it gets too busy, the tower controller may suspend clearances for training operations.

While attending FAA Team safety presentations or airport meetings, I often ask helicopter pilots and flight instructors if they have ever visited the control tower of the airport where they conduct training. I am always surprised to hear so many say no. It is a perfect opportunity for pilots to see aircraft operations from the tower controller's perspective. Such visits can help build a good working relationship between you and tower controllers. It also allows pilots and controllers to exchange information and concerns about what may best accommodate helicopter training for that airport. Watching airport operations from the tower can help you develop respect for how challenging a tower controller's job is to keep everyone safely separated.

Non-towered airports may not be as busy, but training operations at such fields require vigilance, good communication, and coordination with other aircraft operating in the traffic pattern. While pilots are required to see and avoid one another at any airport, position calls and stating intentions over the common traffic advisory frequency (CTAF) are helpful for safety and situational awareness.

If planning to conduct helicopter flight training at a non-towered airport, consider contacting airport management to advise them of your intention. Airport managers appreciate the call and can share additional information about the airport and its surrounding area, like noise sensitive areas or safety factors such as nearby construction cranes. In addition to gathering useful information, the phone call will also help you establish a good working relationship with the management of that airport for future flights.

Regardless of which type of airport you use to conduct flight training, you must become familiar with all available information at that airport. As part of your preflight planning, review the Chart Supplement (formally known as the Airport/Facility Directory) to help you decide if the airport is suitable for helicopter training. The "Airport Remarks" section provides details of airport services, types of operations, hotspots, and restrictions. If the airport has a diagram, be sure to brief it with your student and have it available in the helicopter for reference. Some airports may have designated areas that allow for helicopter training.

Helicopters will often operate parallel to active runways. The airport may have prescribed procedures that include altitude restrictions and traffic patterns specifically designed to provide separation from fixed-wing traffic. In general, helicopter pilots must avoid the flow of fixed-wing traffic. Such planning is the way to fly safe, and fly neighborly.

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*Jim Ciccone is an aviation safety inspector with the General Aviation and Commercial Division. He is also an Airline Transport Pilot, and a Certificated Flight Instructor in multi-engine land airplanes, as well as helicopters, with 25 years of flying in the Long Island and New York City airspace.*



# Flight Forum

## Here's What Happened — FAA Live Twitter Chat

On July 19, the FAA held a live Twitter chat to answer questions on ADS-B. The FAA teamed up with AOPA, EAA, and the Aircraft Electronics Association during this live Q&A dialogue. Here's a few of the questions answered by the panel. Check #ADSB-chat for more. Visit #ADSBquestion, an ongoing way for the GA community to connect with the FAA.

**Q1: What drove the FAA to the determination that an ADS-B install would be considered a major alteration? — Sparkchasers**

*A1: Because the alteration/installation has a direct impact on performance and rule compliance.*

**Q2: Why is TIS-B limited to ADS-B Out aircraft only? Limits safety and utility for us Stratus users who rent aircraft not yet equipped. — David**

*A2: ADS-B Out can be seen everywhere, even where TIS-B isn't available. The goal is for everyone to equip with ADS-B Out.*

**Q3: How will non ADS-B Out legacy Mode A and C transponders be maintained when they are no longer required to be used? — Art**

*A3: There are no changes to the requirements for Mode A and Mode C transponders. They will be required post-2020.*

**Q4: When will we see TIS-B available for every user with ADS-B In? — Chris**

*A4: TIS-B is available today for everyone with both ADS-B Out and ADS-B In.*

**Q5: What is going on with the TSO C-199 TABS devices. As a glider pilot, I'd love to see systems for less than \$2-3k? — Peter**

*A5: TABS allows for an ADS-B Out equipage with lower certification requirements. There are currently no products in the US that meet TSO-C199. Hopefully, increased competition will reduce the price.*

## BasicMed with a Foreign License?

Dear FAA, to fly under the BasicMed rule, is it enough to possess a valid driver's license or does it have to be a valid, USA driver's license? I hold a valid driver's license for Australia, as well as The Netherlands.

I have an FAA private pilot license (PPL) on the basis of a foreign PPL (CASA issued Australia PPL). Do you recognize the CASA medicals for flying on my FAA license in a FAA registered aircraft in the USA? Cheers,

— Jozef

*Hi Jozef, thank you for your questions. In accordance with sections 61.23(c)(3) and 61.113(i), airmen operating under BasicMed must hold a current and valid U.S. driver's license and comply with all medical requirements or restrictions associated with that license. An international driver's license or any driver's license issued by a country or territory other than the United States does not suffice to meet this requirement.*

*Regarding your question about recognizing foreign medical certificates for BasicMed, the answer can be found in section 61.23(c)(3)(i)(B). The bottom line is that you must have held an FAA issued medical certificate at some point after July 14, 2006 that has not been suspended, revoked, or if authorized under a special issuance, the special issuance must not have been withdrawn. A medical certificate issued by another country does not suffice.*

## Rx for the BasicMed Course

Hello, I am a registered nurse and wondered, since I am a health professional and deal with meds on a daily basis, can I waive the BasicMed Course? Thank you,

— William

*Hi William, thank you for your valued work as a health professional. Since the BasicMed course provides a record of your exam (the date of the exam, and the name of your providing physician) and generates your certificate, you cannot waive the course. Although you already have medical knowledge as a registered nurse, the BasicMed course is not a medical degree course. Taking the course is very beneficial, as it will provide you with all the fit to fly rules, and the tools to conduct a self-assessment, as well as additional information on aeromedical factors and physiology.*

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 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-921, 55 M Street, SE, Washington, DC 20003-3522, or e-mail [SafetyBriefing@faa.gov](mailto:SafetyBriefing@faa.gov).



## To Touch the Future

*I touch the future. I teach.*

— Christa McAuliffe (Challenger space shuttle astronaut)

I come from a family of teachers, including several generations. Growing up, I repeatedly vowed to myself, and to everyone in earshot, that I would absolutely, positively, never, *ever* be a teacher. Like, *ever* (apologies to Taylor Swift). My first career in the U.S. State Department seemed to ensure that I had succeeded.

But then ... life happened. I started learning to fly in the early 1990s and, as I began to acquire certificates and ratings, ground instructor tickets were a logical part of the package. That led to flight instructor training, and so it happened that on an August day in 1996, I went home with a crisp new certificate. I also had a new part-time job, because the flight school hired me not just before the ink on my new ticket was dry, but in fact before the FAA inspector had even finished applying said ink to the paper.

### Why We Fly, and Why We Teach

As a friend sagely observed, “you finally became a teacher because now you have something to teach.” He was right. I think teaching found me because aviation found me first.

These are themes that author and university professor Parker J. Palmer beautifully explores in *The Courage to Teach*. As Palmer observes:

*Many of us were called to teach by encountering not only a mentor but also a particular field of study. We were drawn to a body of knowledge because it shed light on our identity as well as on the world. We did not merely find a subject to*

*teach — the subject also found us. We may recover the heart to teach by remembering how that subject evoked a sense of self that was only dormant in us before we encountered the subject’s way of naming and framing life.*

There are echoes of this idea in the work of Richard Bach, whose essays in *Gift of Wings* get to the heart of the “why fly” question. As Bach expresses it:

*It’s possible that in flight you’ll find much to learn of yourself and of the path of your life on this planet. ... Flight, to you, is a required essential tool in your mission of becoming a human being.*

### How We Teach

It’s true that, for many, flight instruction is a time-building waypoint on the path to an airline career. Remember, though, that having other career goals doesn’t mean that you can’t be, or won’t be, a good instructor. No matter why you are in the aviation instruction business, you can give — you should give — you *must* give — the very best you can offer to this time when you touch both the present and the future of aviation.

Of course that means you must instruct your aviation students in the specifics of what they must know, consider, and do to fly, or in the case of aviation mechanics, fix airplanes. But I challenge you to offer at least two more things.

First, as Khalil Gibran writes in the “On Teaching” essay in *The Prophet*, recognize that the wise teacher “gives not of his wisdom, but rather of his faith and his lovingness” so that he “leads you to the threshold of your own mind.”

Second, as Palmer suggests, remember that “good teachers possess a capacity for connectedness. They are able to weave a complex web of connections among themselves, their subjects, and their students so that students can learn to weave a world for themselves. The connections made by good teachers are held not in their methods but in their hearts ... the place where intellect and emotion and spirit and will converge in the human self.”

My thanks to all who teach. There can be no greater calling in aviation.

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## Jim Ciccone

*Aviation Safety Inspector, Airmen Training and Certification Branch*



The spark that lit Jim Ciccone's need to fly grew out of stories and old photos of his father serving as an aerial gunner in a Martin B-26 *Marauder* during WWII. That experience led to his dual career path as a New York City police officer and flight instructor. While serving as a rookie cop in Brooklyn, Jim took flying lessons. After earning his certificates and ratings, he became a flight instructor as a side gig.

Jim's two passions merged when he had the opportunity to join the NYPD Aviation Unit. In that capacity, he flew helicopters to provide patrol and counter terrorism air support for police officers and other city agencies, which included air-sea rescue in the surrounding waterways around New York City.

"There was never a dull day," he recalls. "I would always tell myself that this is the best job ever, with an amazing view of the city!"

Jim retired from the NYPD after 23 years of service. He then joined the FAA team as a designated pilot examiner for both airplanes and helicopters. In 2008, he directed his vast aviation experience in the New York area to his new job as an aviation safety inspector in the Farmingdale Flight Standards District Office (FSDO). He later became the frontline FSDO manager, and is now assigned to the Airmen

Training and Certification Branch in the Flight Standards Service's General Aviation and Commercial Division. In this role, Jim provides technical support for policy that affects airman certification.

Specifically, Jim provides support to the Airman Certification Standards (ACS) Working Group, the U.S. Helicopter Safety Team, and the new certification team for the first civil powered-lift category aircraft (think *Osprey* tiltrotor).

With the transition to ACS now underway, Jim emphasizes that participation from the aviation community is essential and encourages all flight instructors to learn how the ACS can improve the development of capable, safety-minded pilots.

"Reducing the GA accident rate remains a high priority for the FAA," he notes. "Getting flight instructors and evaluators to effectively teach risk management and properly use scenario-based training is key to reducing fatal accidents."

Flight instructors should also be cognizant of new GA aircraft technology intended to increase situational awareness and improve aircraft safety. These include angle of attack indicators and synthetic vision displays.

"Regardless of the equipment, flight instructors must be ready to meet the challenges associated with training airmen by staying informed, educated, and engaged with the aviation community they serve," Jim said.

As a current pilot and flight instructor, Jim regularly engages with the GA community by speaking with pilots during aviation events, safety presentations, and airshows. You may also see Jim in the skies over New York when he flies with friends who own airplanes in the area. Jim thinks that these types of interactions are the best way to exchange concerns, challenges, and safety practices with the aviation community.

"Stay informed, and keep learning!"

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*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 public affairs officer with Civil Air Patrol.*



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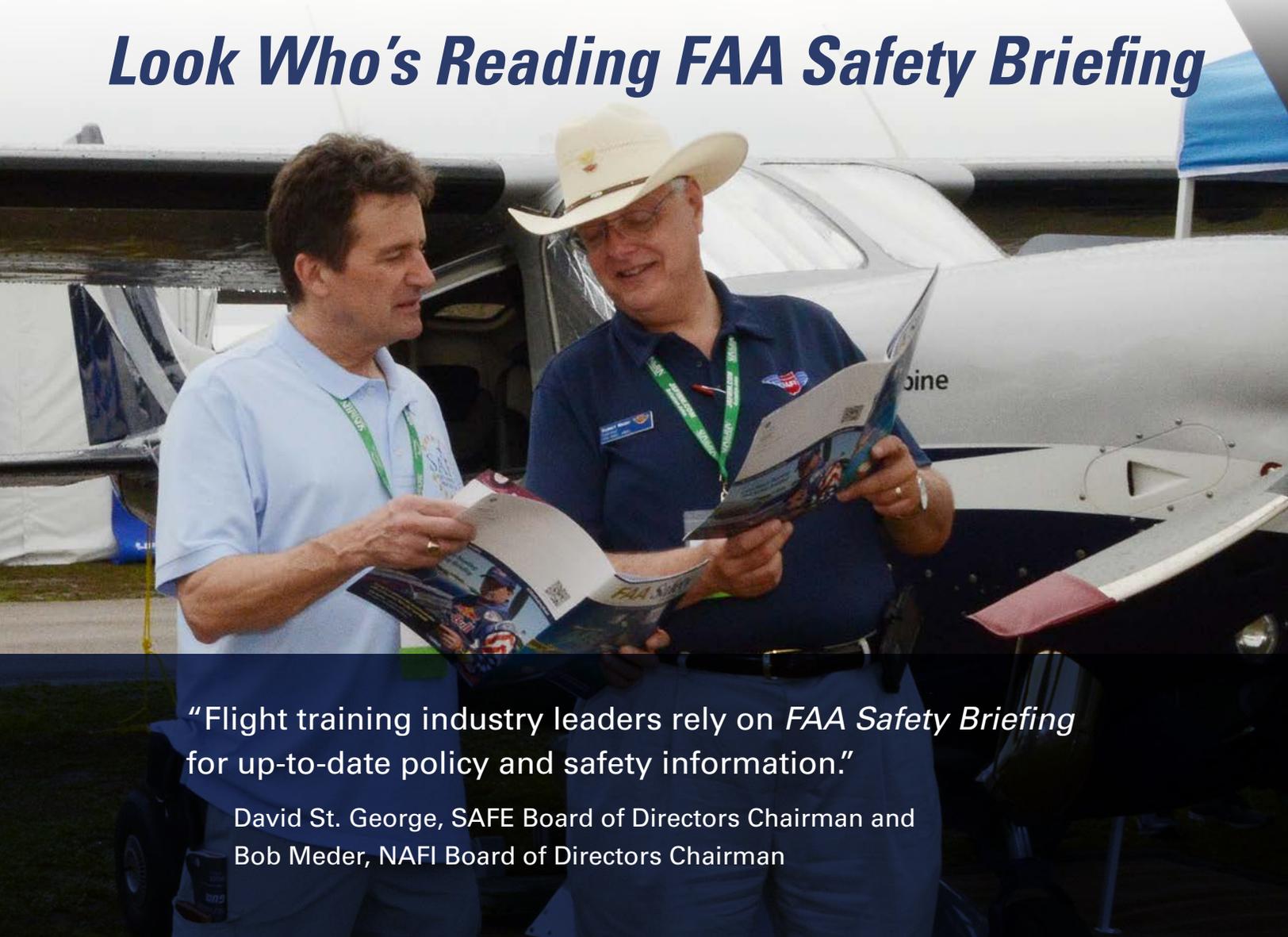


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# *Look Who's Reading FAA Safety Briefing*



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