

July/August 2024

# FAA BRIEFING Safety

## Aviation Educators



Federal Aviation  
Administration

**14** Checkride Day Errors  
and How to Avoid Them

**18** FFAST-Tracking  
Your CFI Success

**22** Ground is Good – How  
to Be an Effective  
Ground Instructor



U.S. Department  
of Transportation

## Federal Aviation Administration

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## ABOUT THIS ISSUE ...



The July/August 2024 issue of *FAA Safety Briefing* explores the critical role flight instructors play in keeping the National Airspace System safe and preparing the next generation of pilots. Feature articles focus on instructional best practices as well as the many tools and educational resources that can help sharpen your teaching skills.

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# FAA **BRIEFING** Safety

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

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## THE IMPORTANCE OF AVIATION EDUCATORS



I think most folks would agree that flight instructors are an absolutely critical cog in the machinery of the aviation industry. At one point or another in our aviation endeavors, we depend on them for their expertise, guidance, and mentorship, and look to them as role models that portray the professionalism and passion for aviation that we should all strive to achieve. Let's also not forget the pivotal role they play in the growth of our industry by preparing the next generation of pilots and arming them with the knowledge and decision-making skills needed for safety and success. Given these vast responsibilities, I'd argue there are few pursuits in aviation nobler than the role of flight instructor.

While flight instructors excel at being educators, they have an equal responsibility in being *educatees* by keeping their skills sharp and maintaining a life-long learning process. That's a key reason we've focused this issue on being a resource for flight instruction. Allow me to highlight a few areas within these pages that you may find helpful in your educational pursuits.

In the feature "Inflight Insights," we provide an overview of an instructor's responsibilities, highlight several reasons to become an instructor, and

share some words of wisdom from a few veterans in the field. Then, in the article "FAAST-Tracking Your Flight Instructor Success," we discuss the critical support role that the FAA Safety Team (FAASTeam) provides to the instructor community by way of regular forums, special events, and an impressive library of free resources that are available to all. This article also covers the important role of instructors in the WINGS Pilot Proficiency program.

Other features in this issue cover how to shore up your ground school game, avoid costly mistakes for your students on check-ride day, and explore how a principles-based approach to flight training could help students reach a correlation level of learning more easily.

Another source of inspiration for success I'd like to call your attention to is this year's National General Aviation Award winners: Flight Instructor of the Year **Adam Magee**, Aviation Technician of the Year **Marty King**, and FAASTeam Representative of the Year **Cary Grant**. Please join me in congratulating these airmen for this prestigious honor and be on the lookout for them this July at AirVenture. Be sure to go to [generalaviationawards.com](http://generalaviationawards.com) to learn more about their amazing

achievements, as well as how to nominate a deserving airman you know next year.

Another great resource for instructors is the Flight Instructor's Model Code of Conduct. If you're not familiar with the Aviator's Model Code of Conduct series produced by the Aviators Code Initiative, I encourage you to check it out at [secureav.com](http://secureav.com). We jointly encourage instructors to:

- a. make safety a high priority,
- b. seek excellence in airmanship,
- c. develop, exercise, and teach good judgment, and aeronautical decision-making,
- d. recognize and manage risks effectively, and teach sound principles of risk management,
- e. demonstrate and teach situational awareness, prudent operating practices, and personal operating parameters (e.g., minimums),
- f. aspire to professionalism,
- g. act with responsibility and courtesy, and
- h. adhere to applicable laws and regulations.

In closing, I'd like to again acknowledge and recognize all those who have taken up the call to be educators, whether you're just starting out, or have made flight instruction a lifelong pursuit. I'm also reminded of some sage advice for instructors provided by the former editor of this publication, Susan Parson. "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."

Thank you and safe flying!

## AVIATION NEWS ROUNDUP

### New Airman Certification Standards and Practical Test Standards

The FAA introduced the new Airman Certification Standards (ACS) and Practical Test Standards (PTS); Incorporation by Reference (IBR) final rule on April 1, 2024, available at [ecfr.gov](https://ecfr.gov). The final rule codifies 15 ACS and 18 PTS into Title 14, Code of Federal Regulations (14 CFR), under parts 61, 63, and 65 per the Administrative Procedure Act (APA), which provides for public comment during rulemaking. As a result, the regulation identifies specific testing standards associated with each certificate, rating, or proficiency check, eliminating ambiguity as to which standard must be used. The final rule provided a 60-day implementation period from the published date and became effective on May 31, 2024. The FAA also provided pertinent guidance for part 61 airman certification for this new rule and published Notice 8900.691, *Airman Certification Standards and Practical Test Standards for Airmen*. You can view the notice at [bit.ly/3QCN5Et](https://bit.ly/3QCN5Et).

What changed during this rulemaking is that the FAA published six new ACS for the powered-lift category. The FAA also converted several PTS to ACS for the rotorcraft/helicopter, which include Private Pilot for Rotorcraft: Helicopter Rating and Instrument Rating; Helicopter, Commercial Pilot for Rotorcraft Category: Helicopter Rating; and the Flight Instructor for Rotorcraft Category: Helicopter Rating. The existing ACS for the airplane category was revised, while Flight Instructor for Airplane Category PTS was also converted to the ACS format.

The FAA also published the new ACS Companion Guide for Pilots (FAA-G-ACS-2) at [bit.ly/FAAACS](https://bit.ly/FAAACS) to assist ACS users with familiarization of its content as well as testing requirements.

The FAA will work with our industry partners through the Aviation Rulemaking Advisory Committee to continue converting the remaining PTS to ACS format to ensure robust testing standards that correlate with all facets of airman testing.

### AirVenture 2024 Procedures

The FAA published the Oshkosh 2024 Notice — a must-read for anyone flying an aircraft to AirVenture. The document outlines procedures for many types of aircraft that fly to Oshkosh for the event, as well as aircraft that land at nearby airports.

The ATC-assignable transition points approaching Oshkosh from the west that will ease holding and congestion will again be in effect in 2024. These points are at Endeavor Bridge, Puckaway Lake, and Green Lake. They will be announced on the arrival ATIS when ATC activates them at times of highest traffic flows. Some changes to the 2024 Notice include:

- A TFR will be in effect in MKE airspace on July 15-18
- A new FISK holding procedure
- No FISK arrivals before 8 a.m. CDT on Thursday, July 25

To ensure safe operations on arrival and departure, go to [bit.ly/OSHnotice](https://bit.ly/OSHnotice) to download the Notice.

Preflight Planning		Changes for 2024
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VFR Arrival	5-14	o RNC TFR in MKE Airspace - July 15-18
IFR/VFR Departure	15-16	o New FISK holding procedure - Page 9
Oshkosh Airport Notes	17	o Thursday 7/25 - No FISK arrivals before 8:00am
Turbine/Warbird Arrival	18	
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Helicopter Arrival/Departure	20	
Ultralight Arrival/Departure	21	
Fond du Lac	22-23	
Appleton	24-25	
IFR Arrival/Departure	26-29	
Flight Service Info	30	

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

Special Flight Procedures effective Noon CDT July 18 to Noon CDT July 29, 2024

### Updated Advisory Circular Supports Paperless Flight

The FAA recently issued Advisory Circular (AC) 91-78A, *Use of Electronic Flight Bags*, to give clarity to those wanting to replace required paper information and/or utilize hosted database and software applications as part of electronic flight bag (EFB) functionality. The AC describes an acceptable means, but not the only means, to replace required paper information. However, if you use the means described in the AC, you must follow it in all important respects.

This guidance allows pilots and aircraft owners to fully digitize their cockpits and associated reference materials, including aircraft manuals, supplements, and weight and balance information. You can review this AC at [bit.ly/9178EFB](https://bit.ly/9178EFB).



## CFI Certificate Expiration Rule

The proposal to amend the flight instructor certificate renewal requirements by changing the existing renewal requirements to recent experience requirements and adding a new method for persons to establish recent flight instructor experience is still in the rulemaking process at press time and moving forward.

Officially named “Removal of Expiration Date on a Flight Instructor Certificate; Additional Qualification Requirements to Train Initial Flight Instructor Applicants; and Other Provisions,” the proposed rulemaking includes five key changes:

1. Removes the expiration date on CFI certificates and changes existing renewal requirements to recent experience requirements.
2. Codifies the FAA’s WINGS Pilot Proficiency Program into regulation as a method to meet CFI recent experience.
3. Reinstates lapsed CFI privileges through a flight instructor refresher course (FIRC), provided the CFI’s recent experience has not lapsed for more than three calendar months.
4. Adds two new qualification methods for flight instructors to train initial CFI applicants.
5. Relocates and codifies Special Federal Aviation Regulation (SFAR) 100-2 into regulations.

You can check the status and review the details of the proposed rulemaking at [bit.ly/3wla3sP](https://bit.ly/3wla3sP).

## FAA Adds to Approved Meds List

The FAA added three medications that are allowed for special issuance consideration for use by pilots and air traffic controllers, a significant development for the mental well-being of professionals working in the aviation industry. The FAA now allows certain selective serotonin reuptake inhibitors (SSRI), serotonin and norepinephrine reuptake

CONDITIONALLY Acceptable Antidepressant Medications with SI (used as a single agent, if otherwise qualified.)	
<b>Selective serotonin reuptake inhibitors (SSRI):</b> <ul style="list-style-type: none"> <li>• citalopram (Celexa)</li> <li>• escitalopram (Lexapro)</li> <li>• fluoxetine (Prozac; Sarafem)</li> <li>• sertraline (Zoloft)</li> </ul>	<b>Serotonin and norepinephrine reuptake inhibitors (SNRI):</b> <ul style="list-style-type: none"> <li>• desvenlafaxine (Pristiq)</li> <li>• duloxetine (Cymbalta)</li> <li>• venlafaxine (Effecor)</li> </ul>
<b>Dopamine/norepinephrine-reuptake inhibitor (NDRI):</b> <ul style="list-style-type: none"> <li>• bupropion (Wellbutrin) SR/ER formulations ONLY</li> </ul>	

inhibitors (SNRI), and dopamine/norepinephrine-reuptake inhibitors (NDRI) for special issuance/special consideration. In total, there are eight drugs that pilots and controllers can take and keep their medical certificates.

For more information, visit [faa.gov/ame\\_guide](https://faa.gov/ame_guide).

## 2024 FAA Drone and Advanced Air Mobility Symposium

This year’s FAA Drone and Advanced Air Mobility (AAM) Symposium focuses on how the FAA continues to safely integrate these aircraft while creating a framework to accelerate advanced operations.

The event, which runs from July 30 to Aug. 1 at the Baltimore Convention Center in Maryland, brings together representatives from the FAA, other government agencies, international aviation experts, industry leaders, and academia. The presenters and panelists will discuss the latest information and advancements related to the diverse uses of drones and the safe integration of AAM aircraft, like air taxis, into the national airspace system.

This year’s theme is Connected Skies/Connected Communities. Sessions and workshops focus on how the FAA continues to safely integrate drones while creating a regulatory and operational framework to accelerate advanced operations such as beyond visual line of sight and UAS Traffic Management (UTM). AAM sessions and workshops focus on how air taxis and electric vertical take-off, and landing (eVTOL) aircraft will change aviation as we know it.

To register and get updates on event programming, visit [faadroneaamsymposium.org](https://faadroneaamsymposium.org).

## FAA Requires Aviation Organizations to Detect, Address Safety Risks Early

The FAA is issuing new requirements for charter airlines, commuter airlines, air tour operators, and certain aircraft manufacturers to implement a safety management system (SMS).

SMS provides a structured, repeatable, systematic approach to proactively identifying hazards and managing safety risk. By incorporating SMS, these aviation organizations will be better able to develop and implement mitigations appropriate to their specific environment and operations.

The FAA’s final rule mandates that these organizations develop an SMS within one to three years, depending on the operation. The FAA has required U.S. airlines to have SMS since 2018, and some manufacturers already developed and implemented SMS, which the FAA accepted.

The rule also requires those who have an SMS to share hazard information with other aviation organizations so they can work collaboratively to identify and address potential safety issues.

The final rule goes beyond the requirements of the Aircraft Certification, Safety and Accountability Act of 2020, which directed the FAA to mandate SMS only for aircraft manufacturers. The rule also addresses recommendations from the National Transportation Safety Board and independent review panels.

You can read the final rule at [bit.ly/SMSrule](https://bit.ly/SMSrule).



## GETTING TO YES

In the May/June 2024 issue, I reviewed some fatal accidents where either a mental health diagnosis and/or drug (some illicit) contributed. These were examples of why we do not authorize some diagnoses and treatments for flying. Now I would like to review what we have done over the past decades to allow more pilots with formerly disqualifying conditions to fly (after appropriate evaluation and treatment).

Before we do that, recall that the FAA medical examination can differ from a clinical evaluation. The FAA exam is more akin to an occupational exam. Our goal is to determine if someone can safely operate in the National Airspace System (NAS). As such, we sometimes ask for testing, which would not be requested for routine clinical management. We also do not allow some treatment options, which may adversely impact aviation safety.

Long ago, the professional aviation community recognized that alcohol abuse was a significant safety issue; however, it was often hidden due to concerns that disclosure was career-ending. In the 1970s, the FAA, industry, and the unions collaborated to develop the current HIMS (Human Intervention Motivational Study) program. FYI, the program was purposely called HIMS to avoid any negative attention since it was designed to return pilots to the cockpit despite a known substance abuse disorder once in satisfactory recovery. To date, thousands of pilots have successfully been treated, monitored, and returned to both the flight deck and sobriety. The 85% success rate is among the highest of similar programs.

Significant cardiac disease was once a permanent grounding item. If you had a heart attack, you could not fly

again as a crew member. Since the early 1980s, coronary bypass graft surgeries, balloon angioplasty, stenting, and valve replacement have become almost routine, and thousands of pilots with these procedures have been returned to flight status. We convene a team of cardiologists to review these cases on a regular basis. We often request additional testing, but remember, we are not evaluating just your clinical care, but the risk to aviation safety.

Insulin-treated diabetes mellitus was also permanently disqualifying for many years. Both a low blood sugar and one too high can impair cognition. In the 1980s, the FAA first authorized non-insulin treatment of diabetes for pilots. In 1996, the FAA approved a protocol for the use of insulin by pilots holding a Class III medical. Technology continued to advance, and the FAA began authorization of insulin-treated pilots with diabetes for Class I and II medical certificates in 2019 if they demonstrate excellent control. To date, more than 250 pilots have been authorized for a Class I or II medical despite using insulin to control their diabetes.

ADHD, attention deficit hyperactivity disorder, is a diagnosis seen much more frequently now than a few decades ago. Some of this is due to better recognition; unfortunately, some is due to overdiagnosis. We have recently looked at our records of those with this diagnosis and the outcomes of the evaluations that we required.

As a result, we have been able to institute a fast-track pathway to more rapid approval for those who are off medications and have functioned well (such as occupational or academic success without accommodation) for at least four years.



Depression and the use of anti-depressants have been particularly challenging for the FAA to approve. Why? Both the medications and the underlying diagnosis can impair executive functions such as problem-solving and decision-making. In other words, both can impair one's ability to recognize self-impairment. After careful research and discussion, we authorized four SSRIs (selective serotonin reuptake inhibitors) under a specific protocol in 2010. This program has been very successful. Over the past year, we have added an additional four medications as acceptable treatments of depression and anxiety.

While we cannot approve everyone, we have steadily increased the number of conditions that we can approve after appropriate evaluation and treatment. Both the treatment and condition must be aeromedically acceptable; this has been and will remain challenging. Nonetheless, we will continue our efforts to get to "yes" when it is safe to do so.

*Dr. Susan Northrup received a bachelor's degree in chemistry, a medical degree from The Ohio State University, and a master's degree in public health from the University of Texas. She is double board-certified by the American Board of Preventive Medicine in Aerospace Medicine and Occupational Medicine. She is a retired U.S. Air Force colonel and a former regional medical director for Delta Air Lines. She is also an active private pilot.*

	0830 – 0945	1015 – 1130	1200 – 1330	1400 – 1530	1600 – 1715	
MONDAY JULY 22	<b>FAA Accident Investigation Updates</b> Patrick Hempen FAA	<b>Cleared for Take-Off</b> James Groat FAA	<b>Engine Failure and Return to the Airport</b> Dr. George Bolon Win Air Aviation Services	<b>How to Talk to ATC</b> Heather McNevin FAA/ATO	<b>Reducing Risk from Common Dangerous Goods</b> Victoria Lehman FAA	<b>Join us for daily forums at the FAA Safety Center.</b>
	WINGS: BK1	WINGS: BK2	WINGS: AK2	WINGS: BK3	WINGS: BK3	
TUESDAY JULY 23	<b>How to Obtain a Compliant Weather Briefing</b> Terry Lankford FAA	<b>GPS Resiliency</b> Dr. Vince Massimini Rick Niles Joann Ford FAA	<b>Postmortem or Premortem</b> Bruce Webb Dir. Educ. Airbus	<b>Loss of Control on Land and Water</b> Steve Guetter Wipaire	<b>How to Avoid a Fighter Intercept</b> Trevor Boswell NORAD	<b>Seaplane Base Forums? Use the QR code below.</b>
	WINGS: BK1	WINGS: BK3	WINGS: AK1	WINGS: AK2	WINGS: BK1	
WEDNESDAY JULY 24	<b>Learning or Training</b> Bruce Webb Dir. Educ. Airbus	<b>Colorado Mountain Flying &amp; WX</b> Bill Standerfer Chairman CPA	<b>Checkride Failure Trends: Interactive Discussion</b> Sarah Rovner FAA Designee	<b>Straight Talk About Aviation Safety</b> John & Martha King King Schools	<b>Powering Up Vertical Aviation with Superior ADM</b> James Viola Kim Hutchings Pete Bunce VAI	<b>FAA Legal will be our mid-day star tomorrow!</b>
	WINGS: AK2	WINGS: BK1	WINGS: AK1	WINGS: BK2	WINGS: BK3	
THURSDAY JULY 25	<b>General Aviation Awards</b> *CFI of the Year *AV Tech of the Year *FAA Team Rep of the Year	<b>Operational Discipline: Do You Really Have It?</b> Greg Feith NTSB retired	<b>*No Session*</b> <b>Meet the FAA Administrator</b> @ Theater in the Woods	<b>Letters from FAA Legal: What to Expect</b> Brian Khan FAA	<b>CO! It's a Gas!</b> Mike Montefusco FAATeam Rep	<b>Meet the FAA at Theater in the Woods today!</b>
		WINGS: BK1	*No Session*	WINGS: BK3	WINGS: BK3	
FRIDAY JULY 26	<b>Aeromedical Updates</b> Dr. Susan Northrup FAA Federal Air Surgeon	<b>Power Loss at 300 Feet: What Went Wrong, What Went Right</b> Philip Mandel FAATeam Rep	<b>Prepare &amp; Prevent Instead of Repair &amp; Repent</b> Ramin Panahi FAA	<b>Perfect Landings</b> Mike Montefusco FAATeam Rep	<b>Homebuilt Aircraft Maintenance: Who Can Do It?</b> Joe Norris FAATeam Rep	<b>CFI education most of the day today!</b>
	WINGS: BK3	WINGS: BK2	WINGS: BK1	WINGS: BK2	AMT: 1.0	
SATURDAY JULY 27	<b>Enhancing Turbulence Info for GA</b> Tammy Flowe FAA	<b>The Most Common Cause of Fatal Accidents</b> Ed Verville FAA Designee	<b>IFR Tools for VFR Pilots</b> Tom Slater Professional Pilot	<b>Instrument Departures: ODPs and SIDs</b> Ed Verville FAA Designee	<b>What Went Wrong? Pilot Factors in WX Accidents</b> Dr. Ian Johnson FAA	<b>Seaplane Base Forums are Monday thru Friday only!</b>
	WINGS: AK1	WINGS: BK2	WINGS: BK1	WINGS: AK1	WINGS: BK1	



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FAA Forums open daily at 0830 unless otherwise noted.  
 Schedule is subject to change. For updates, scan the QR code to the right or go to: [bit.ly/FAA\\_Forum](https://bit.ly/FAA_Forum)







# BEYOND ROTE LEARNING

## *A Principles-based Approach to Flight Training*

By Rich Stowell



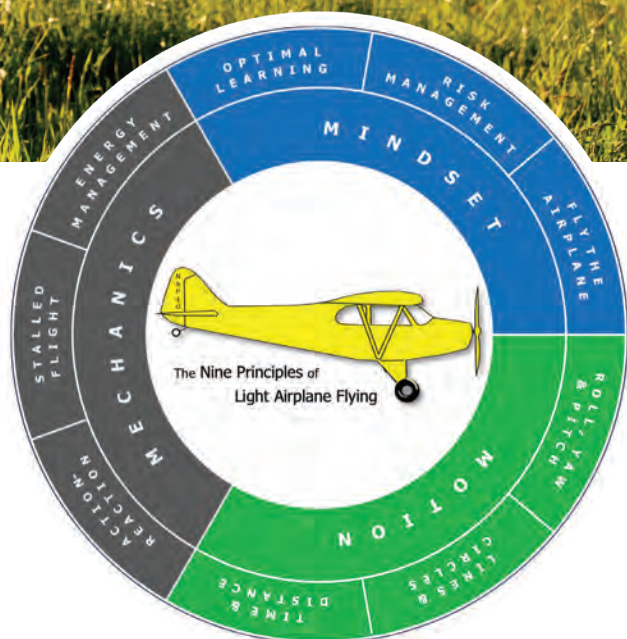
According to the FAA's *Airplane Flying Handbook*, airmanship includes "a sound knowledge of and experience with the principles of flight." The classic treatment focuses on things like the atmosphere, airfoil design, and theories about lift. But these are the principles of *designing* an airplane.

Two questions come to mind:

1. What are the first principles of *flying* an airplane?
2. Would training in the context of such principles help push knowledge and skill to the correlation level of learning and help them to solve problems?

After months of thinking about the first question, I identified nine first principles of flying small airplanes. They fall into three categories as shown in the graphic: Mechanics, Mindset, and Motion.

The terminology is familiar and simple. That's no coincidence. We've been using these words and alluding to these principles all along. We see fragments of them in training manuals. We hear whispers of them behind the words used by flight instructors. But the principles aren't explicitly declared anywhere.



A diagram of the nine principles of flying small (light) airplanes.

Because flight training isn't tied to first principles, concepts and maneuvers tend to get compartmentalized. Take turns around a point and rectangular courses, for instance. One teaches pilots how to judge and compensate for the effects of the wind. The other models the traffic pattern. Correlation means blending the concepts and skills developed in these maneuvers when flying real-world traffic patterns. Yet too many pilots don't correct for the wind in the pattern.



## Reaction

I published the nine principles in October 2022. Some instructors aren't sure what to do with them yet. Others have embraced the challenge of making them an intentional part of the training they provide.

Nine-time master instructor Michael Phillips said that “first principles serve as a roadmap for optimal teaching by instructors. That in turn can lead to optimal learning by their students.”

Bruce Chase, designated pilot examiner and chair of the Flight Science Department at LeTourneau University, wrote:

“First principles are the foundation of pilot training. Mindset, Motion, and Mechanics provide simple but deep concepts from which a pilot can grow. Without a

grounding in first principles, pilots often attempt to memorize wholes while failing to comprehend the parts. This leads to faulty assumptions and error.”

I also had ChatGPT critique the principles. The chatbot said:

“[T]he nine principles ... offer a comprehensive foundation for understanding the core principles of flying light [small] aircraft. These principles cover the essential knowledge and skills required for safe and proficient flying ... ”

As part of an experiment in optimal learning, the nine principles informed content that will be delivered during EAA AirVenture in Oshkosh, Wisc., this year. The non-traditional approach to teaching and learning will be tested over several days at the EAA Pilot Proficiency Center. (For more information, see [bit.ly/4aQFt8m](https://bit.ly/4aQFt8m)).

**The nine principles offer a comprehensive foundation for understanding the core principles of flying small aircraft.**

## Assessing Learning

The FAA *Aviation Instructor's Handbook* lists the basic levels of learning as rote, understanding, application, and correlation (RUAC). The handbook also gives a generic description of each level. Instructors can recite the levels of learning (a perfect example of rote learning), but can they



Mindset Principle	Levels of Learning			
	Recall	Understanding	Application	Correlation
	The ability to repeat something back.	The ability to comprehend the meaning of something.	The ability to put something that has been learned to use.	The ability to associate what has been learned with prior or subsequent learning.
<b>Fly the Airplane</b>	Aviate. Navigate. Communicate.	Surviving an emergency could hinge on my manual flying skills.	Regularly flying hands-on to avoid overreliance on automation.	The PIC bears the responsibility and is the final authority.

RUAC levels of learning for the *fly the airplane principle*.

give practical examples of each level to their students? How do students know where they are on the RUAC scale?

Here's where principles can help. The graphic above shows an example of the RUAC levels filled in for the Mindset principle, *fly the airplane*. Of course, other examples of the levels of learning are possible for this principle.

Per the FAA's *Aviation Instructor's Handbook*, an authentic assessment of learning requires pilots to exhibit "in-depth knowledge by generating a solution instead of merely choosing a response." Flight training is also supposed to create pilots who are safe and competent. A deliberate, principles-based approach can steer this process for instructors and students alike.

### A Thought Exercise

For the second question I presented earlier, consider this thought exercise. Imagine that on day one of training, we introduced students to the motion principles of *lines and circles* and *roll, yaw, and pitch*.

Guided by the instructor, the student works out that all flight paths are made up of straight lines and circles; that lines can be described as level, climbing, or descending; and that circles can occur in the horizontal, vertical, or oblique. Note that "turns" and "loops" are synonymous with "circles" and "curved flight paths."

Also on day one, imagine the student learns to perceive roll, yaw, and pitch motions relative to them like this:

- Roll appears as a head-to-hip movement.
- Yaw appears as an ear-to-ear movement.
- Pitch appears as a head-to-feet movement.

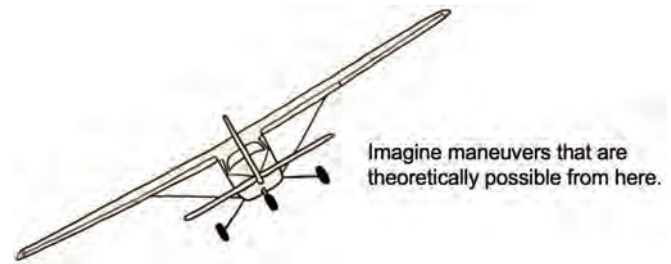
Roll, yaw, and pitch will now look the same to the student no matter the attitude of the airplane.

Once intellectualized, the student experiences these motions through visualization or in a simulator and then gets to see and feel roll, yaw, and pitch motions in flight.

The student also learns about secondary effects such as adverse yaw, torque, P-factor, and slipstream. They then experience these effects using training exercises described in Advisory Circular 61-67C, *Stall and Spin Awareness Training*.

### Another Level

Let's broaden our thinking even more. Now imagine you're looking at the tail end of an airplane. It's in level flight, banked 30 degrees to the left. You don't know how it got



An airplane banked 30-degrees to the left.

there, or where it's going. You're seeing a snapshot during some maneuver.

Assume that:

- The airplane is approved and capable of any maneuver.
- The pilot has the skills to do any maneuver.
- The energy is whatever is needed for whatever is next.

Thinking in *lines and circles* and *roll, yaw, and pitch*, what's next? What's possible?

A level turn to the left is an obvious choice. But what about a climbing or descending spiral? Or a chandelle? Why not an inside or even an outside loop tilted 30 degrees to the left? How about an inside or an outside rolling turn? What else can you envision?

What if we found similar ways for students to play with all the principles like this during training?

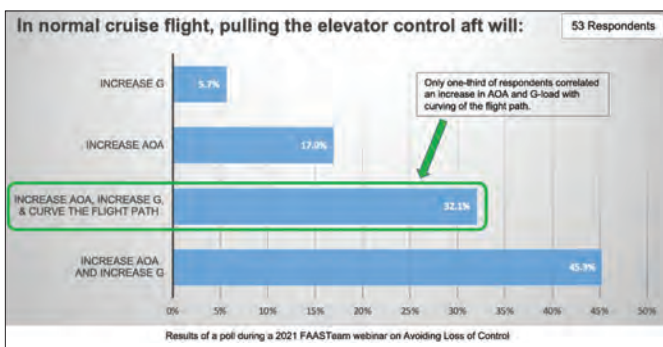
**If we base flight training on first principles first, maybe more pilots would reach the correlation level.**

### Toward Correlation

Like Neo in the film *The Matrix*, we're able to see the underlying code at the correlation level of learning. These two motion principles reveal the simplicity of flight: lines, circles, roll, yaw, and pitch. We build our maneuvers by combining these elements in different ways. We can also deconstruct maneuvers into these elements. Think whole-part-whole learning.

The FAA calls straight-and-level flight, turns, climbs, and descents the "four fundamentals." Through the lens of first principles, you can see these are just lines and circles. You can imagine the combinations of roll, yaw, and pitch needed to go from straight-and-level flight to a wings-level climb or descent, from straight-and-level to a climbing turn like the chandelle, or from a level turn back to straight-and-level.





Results of a poll during a 2021 FAASTeam webinar on avoiding loss of control.

But don't confuse simple with easy. We can combine lines, circles, roll, yaw, and pitch in a near-infinite number of ways. Some of the other nine principles are also in play — *energy management* and *stalled flight* to name two.

Design and maneuver limits, airspace, regulations, weather, and human factors play roles as well. These and other factors make flying a complex activity. Yet the principles remain the same.

## Results Matter

If we base flight training on first principles first, maybe more pilots would reach the correlation level. Maybe more than one-third of them would correlate changes in angle of

attack and G-load with curving of the flight path, especially when asked what will happen when pulling the elevator control aft during normal cruise flight.

With a knowledge of first principles, no pilot would wonder how an airplane can fly upside down. Or how it can be stalled with the nose below the horizon. No pilot would be confused about what each control does or which one is used to bend or straighten the flight path.

We would also realize that flying doesn't happen to us. It happens because of us. It's *our* mindset that we bring into the flight deck. *We* control the motion. *We* manage the mechanics. And our actions have consequences. Supported by principles, maybe fewer of us would lose control of our airplanes. ▶

Rich Stowell is the 2014 National FAASTeam Rep of the Year and the 2006 National Flight Instructor of the Year. He has provided 9,400 hours of flight instruction, logging 26,000 landings and 35,000 spins along the way. For more information about The Nine Principles, visit [RichStowell.com](http://RichStowell.com).

## LEARN MORE

FAA Risk Management Handbook  
[bit.ly/3Qbnmk0](https://bit.ly/3Qbnmk0)



# The Expectations of Experience

The Right Experiences are the Keys to Success

By Karen Kalishek and Paul Preidecker

**W**hen a pilot is interested in training for another certificate, it's common to hear the question, "How much time do I need to get an airline transport pilot certificate (ATP)?" Not very many ask, "What kind of experience do I need to get an ATP?"

The time versus experience discussion has been around for as long as we have been flying. After the implementation of Public Law 111-216 in August 2013 requiring an ATP certificate to operate in the part 121 environment, much energy and debate has been devoted to this issue. It's a topic that polarizes the industry. The regulations required to support this law are often referred to as the 1,500-hour rule. It would be more accurate to call it the ATP rule. The number of hours required to be eligible for an ATP has always been 1,500. What changed was the need for an ATP certificate to work in a part 121 operation. Before the change, only the captain required an ATP; the first officer could have a commercial certificate. Now, both crewmembers need an ATP.

There are well-known pathways under Title 14, Code of Federal Regulations (14 CFR), section 61.160 that allow issuance of a restricted ATP with less than 1,500 hours. If

you want details, 14 CFR section 61.160 (a-d) outlines the requirements for a restricted ATP allowing certification with 750, 1,000, and 1,250 hours based on meeting specific requirements. The "restricted" part simply means that you are not allowed to upgrade to captain (pilot-in-command) until you log 1,500 hours of total time.

## Time Flies By, But Experience Lasts

The time versus experience discussion is not binary. You cannot have experience without time. In our opinion, though, the right experiences are the keys to success in flight training. The dynamics of pilot hiring and pilot training have changed over time. There was a time when airlines were hiring pilots with 500 flight hours or less. These pilots were successful and are now in the left seat at an air carrier. No one thought they were unsafe because they "only" had 500 hours. They were safe because they came with the right experience, which was then combined with quality training. That should be the focus. In a nutshell, quality training is the bridge between time and experience.

Graduates of accelerated programs and those on the pathways to a restricted ATP must build hours to meet





the current regulations if they are looking for an airline job. Opportunities to build time include flight instruction, aerial surveying, pipeline patrol, and perhaps banner towing. However, building your time in the latter three will not help your instrument scan or skills. That leaves flight instruction as a common and practical pathway.

The industry is experiencing rapid growth and turnover of pilot resources. The mainline carriers are drawing pilots from the regional airlines, and the regional airlines are drawing from the flight schools. Depending on the situation, a new flight instructor may have 300 hours of total time and teach for a year before moving on. Is that enough time to get the right experience needed for an airline training program? In many cases, no. Airlines have added time to the footprint of their training program to allow for additional skill building.

### The Consequences of a Time Focus

Experience has implications broader than the career path of an individual pilot. At the National Association of Flight Instructors (NAFI), we saw from field reports and research that there was an alarming drop in pilot exam first-attempt passing rates in 2022. We brought this trend to the attention

of the General Aviation Joint Safety Committee (GAJSC). Statistics and anecdotal evidence indicate that it was not a short-term blip; rather, it has been a longer-lasting and concerning degradation. FAA designated pilot examiners (DPEs) share stories reflecting a general lack of training depth that is associated with higher rates of test failures.

While there are numerous factors involved, the appeal of entering a lucrative airline career has been combined with a mindset that seniority is extremely important in the airline world. The resulting market demand to meet airline hiring criteria as quickly as possible resulted in the rapid growth of accelerated flight training programs and general pressure throughout the flight training industry to provide training to a significant number of pilot candidates as efficiently as possible.

The FAA issued 134,057 pilot certificates in 2023, a 26% increase from 2022. A total of 69,503 student pilot certificates were issued in 2023 and 11,337 new flight instructor certificates. A consequence has been a growing number of flight instructors with high student loads passing through the profession for a short period. Although experience is gained incrementally through training multiple pilots, there may be little time or motivation for reflection, honing instructional skills, and further self-study. This environment lends itself to a leaky bucket in which pilots who have received marginal training become flight instructors enroute to other work. A lack of experience spreads over time to a broader group as instructors pass their ever-thinner knowledge and skills to the next generation. Pilots in training who are focused on the goal of acquiring certificates and their own rapid advancement may not recognize areas where their own training is insufficient until an examination is unsuccessful. It is not necessarily better if they pass with only marginally acceptable performance, because they move through the system to potentially become flight instructors.

Broad trends do not, of course, reflect individual circumstances. Many relatively inexperienced instructors are excellent at teaching. These instructors have a professional attitude, realizing that primary training, which is most of their work, is the foundation for every pilot and passenger's safety. They understand that they are role models for their learners and take their instructional responsibilities seriously. Although they may be active as flight instructors for a relatively short period, they approach the position with respect for its importance and do their utmost to provide the best possible outcome to those they educate.

Regrettably, our industry also includes active instructors who have somehow achieved flight instructor certification without some of the skills required of a private pilot. It includes those who, for example, have never filed a VFR flight plan and cannot use or teach VOR navigation effectively. DPE get-togethers abound with stories of candidates who indicate that an aircraft engine has one



cylinder, depart in the wrong direction under pilotage, and quickly become lost, and a multitude of other failings. While there remains pressure to increase throughput in the pilot pipeline, the truth is that degraded training clogs the system with those who are under-trained back for retraining and retesting.

### Technology Matters

It's important that we, both as individuals and as an industry, leverage technology to create the path to experience. Advances in simulation technology and attractive pricing make this option more available for everyone. Even if you use a flight training device (or aviation training device) that does not count as credit toward time for a certificate or rating, you are still building skills. Flight training devices are an excellent way to practice emergency procedures that would be difficult, if not impossible, to perform in an actual aircraft safely. Flight training devices offer the chance to fly a more complicated arrival or departure procedure. They help with your scan and are a very efficient use of time compared to the actual aircraft where you might be sitting for 15 minutes or more with the engine and clock running, waiting to depart from a busy airport. Combining flight simulation technology with scenario-based training helps you add experience to your time.

Some well-known part 141 flight schools have incorporated virtual reality (VR) technology into their training programs. Currently, there is no approved time credit from the FAA for pilots who use this technology. However, as the schools have discovered, the absence of credit does not mean the absence of proficiency and safety training benefits.

### Experience Is the Value of Time

We all have our reasons for becoming involved in aviation. Many opportunities are available. If you choose flight instruction as a path to another career, take that time to be the best possible instructor you can be by setting good examples of leadership, professionalism, and knowledge. You'll be encouraging those you teach to do the same. We all win with the right experience. Experience and dedication to training excellence matter. ▶

### Experience Matters

When I was a flight instructor at Middleton Municipal Airport (C29) near Madison, Wisc., the owner had created a nationally known instrument training program called Morey's West Coast Adventures. Hundreds of pilots took advantage of the unique training offered by this program. Two pilots arrived for each "adventure" with a minimum of 20 hours of basic attitude instrument flying. Then, in a turbo Cessna 182RG, we launched across the U.S. towards Seattle, along the coast to the Los Angeles basin, and back to Wisconsin, having crossed the Rocky Mountains twice. The trip took six days, with 40 approaches, and about 45 hours split between the two pilots. At the end, the pilots received a practical test. I was the instructor pilot on 23 of those trips in 24 months. This method of training was meant to immerse pilots in the *experience* of instrument flying. When I applied to a regional airline, the chief pilot looked at my resume and said that while I did not meet all the time requirements (no turbine time), I more than made up for it with experience. What kind of experience? Cross country, pilot-in-command (PIC), and instrument flying in instrument meteorological conditions (IMC). I had a class date three weeks after my initial contact with the airline and quickly moved into the airline's training department.

— Paul Preidecker

Paul J. Preidecker has been a flight instructor for almost 34 years. Retired from a regional airline as chief instructor, he has served on various industry committees, was co-host of FAA Safety Briefly Live, and is president of the National Association of Flight Instructors. Paul is also president of his own company, FlightDeck Insights, where he develops and promotes best practices and SOPs for the general aviation pilot.

Karen Kalishek is a flight and ground instructor, ATP, NAFI Master and FAA Gold Seal Instructor, and DPE. She is chair of the National Association of Flight Instructors, a major in the Civil Air Patrol, 2019 National FAAS Team Representative of the Year, and active in numerous FAA and industry groups. Before aviation, Kalishek was a banking executive, taught graduate school, and spent over 20 years as an international consultant.

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#### JULY

**Short Field Operations** — understanding the benefits of training and practice with short field operations.



#### AUGUST

**Weather Information** — a review of best practices on obtaining and using weather information for your flight.



# Why Was My Student's Practical Test Canceled?

A Look at Some Common Checkride Day Errors and How to Prevent Them

By Kenny Bain and Regina Brock

In the past 12 months, more than 50,000 practical tests were ended before they even started due in part to applicant qualification and aircraft airworthiness issues. Flight instructors are unwittingly hastening their students off to practical tests only to be turned away by the designated pilot examiner (DPE). Issues with endorsements, lack of aeronautical experience or aeronautical knowledge, application errors, and aircraft airworthiness issues are all contributing factors. These cancellations bring about a glaring backlog of applicants waiting, sometimes months, to obtain a much-anticipated practical test.

Part of the flight instructor's responsibilities are to evaluate the student's piloting ability, make practical test recommendations, and ensure the student is prepared and ready before scheduling the practical test. Last-minute cancellations, because an applicant isn't ready, further encumber an already backlogged process.

Some of the common errors made are simple, correctable mistakes. Applicants are disqualified from testing due to deficiencies with Title 14, Code of Federal Regulations (14 CFR), part 61 aeronautical experience and knowledge requirements, missing endorsements, Integrated Airman Certification and Rating Application (IACRA) issues, and aircraft airworthiness issues. We spoke with FAA aviation safety inspectors (ASIs) and DPEs about the ineligibility

issues and discovered many common errors. Let's discuss some specific examples.

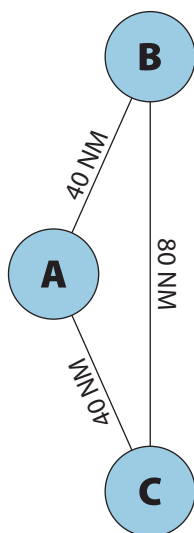
## Common Flight Experience Errors

One issue that often comes up is not meeting the flight time requirement for the solo cross-country flight. 14 CFR section 61.109(a)(5)(ii) describes the solo cross-country requirements for a private pilot applicant airplane single engine rating. The requirement is for "one solo cross-country flight of 150 nautical miles (nm) total distance, with full-stop landings at three points, and one segment of the flight consisting of a straight-line distance of more than 50 nautical miles between the takeoff and landing locations." To fully understand this regulation, reference the definition for cross-country time found in section 61.1(ii), which defines cross-country time for the purpose of meeting the aeronautical experience requirements for a private pilot certificate, commercial pilot certificate, and instrument rating. To meet this requirement, in part, the cross-country must "include a point of landing that is at least a straight-line distance of more than 50 nautical miles from the *original point of departure*." The definition does not require that any one leg of the flight be 50 nm, but the flight includes a point of landing that is at least a straight-line distance of more than 50 nm from the *original point*



of departure. (See the Sisk 2008 and Van Zanen 2009 legal interpretations at [bit.ly/FAA-legal](http://bit.ly/FAA-legal)).

Let's see if you can determine if your student meets the solo cross-country requirement for a private pilot certificate per section 61.109(a)(5)(ii). Your student departs Airport A and flies 40 nm north to Airport B, then flies 80 nm south to Airport C, then another 40 nm north back to Airport A with full-stop landings at all airports. Did this student meet the solo cross-country requirement?



The answer is no. Even though the student met the total distance of 150 nm requirement, there was no landing that was at least a straight-line distance of more than 50 nautical miles from the original point of departure, as defined by section 61.1.

Section 61.129(a)(4)(i) is the commercial aeronautical experience requirement for airplane single engine. The requirement is for “one cross-country flight of not less than 300 nm total distance, with landings at a minimum of three points, one of which is a straight-line distance of at least 250 nm from the original departure point.” The same rule applies here as well. The student *must* have a straight-line distance from the original departure point, which is at least 250 nm from the *original point of departure* and includes a landing.

DPEs have reported issues with the requirements of section 61.129(a)(4). This section requires “10 hours of solo flight time in a single engine airplane *or* 10 hours of flight time performing the duties of pilot in command in a single engine airplane with an authorized instructor on board.” The pilot *must* choose *one* of these options as was clarified in an FAA legal interpretation (Gannis 2016). Flight instructors *must not* combine the two alternatives.

### Common Aeronautical Knowledge Errors

The logging of the aeronautical knowledge areas of sections 61.105 (private pilots), 61.125 (commercial pilots), and



(Civil Air Patrol photo)

61.65 (instrument ratings) are not being met. If provided, the flight instructor *must log the ground training* given on the appropriate knowledge areas for the certificate or rating sought. This is not an endorsement. The regulation in the sections listed above states in part: “A person *must receive and log ground training* from an authorized instructor or complete a home-study course on the aeronautical knowledge areas for the aircraft category and class rating sought.” If ground training is provided, this must be logged in the student’s logbook or training record, not only to satisfy the regulatory sections discussed, but section 61.189(a) as well. Finally, if using the option of a “home-study course,” make sure the certificate specifically states that ground training on the appropriate knowledge areas was completed. Another important item of note is that the use of a “home-study course” does not satisfy the ground training requirements of sections 61.107 or 61.127, which apply to flight proficiency. An applicant must receive and *log ground and flight training* from an authorized instructor on the areas of operation of the section that apply to the aircraft category and class rating sought.

### Common Endorsements Errors

Missing endorsements is another big issue. Specifically, section 61.39(a)(6) states: “... an applicant must have an endorsement, if required by this part, in the applicant’s logbook or training record that has been signed by an authorized instructor who certifies that the applicant has received and logged training time within 2 calendar months preceding the month of application in preparation for the practical test; is prepared for the required practical test; and has demonstrated satisfactory knowledge on the subject areas in which the applicant was deficient on the airman knowledge test.” This is *not* the same endorsement required by





(Civil Air Patrol photo)

the general eligibility requirements found in section 61.103 (private certification) and section 61.123 (commercial certification). Examples of all endorsements can be found in Advisory Circular (AC) 61-65H, *Certification: Pilots and Flight and Ground Instructors* ([bit.ly/AC6165H](https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm?id=10554)).

### **Make sure your student is qualified to take the practical test:**

Practical tests are stressful, and no instructor intends to send their student to a practical test only to be sent home before the test begins. By following some simple guidelines, you, the flight instructor, can ensure your student is prepared and more relaxed to sit for the practical test.



1. Make a checklist of items required for the practical.
2. Plan time with your student prior to the practical test to verify their eligibility.
3. Review the eligibility requirements in 14 CFR part 61 for the certificate or rating sought. Verify the aeronautical experience is documented in the student's logbook.
4. Check for a current flight review if applicable.
5. Review the IACRA application and verify the times match what is in the student's logbook. Review all the blocks in the application and check for errors. Make sure the name matches the student's identification and the knowledge test.
6. Provide the required endorsements. Refer to 14 CFR part 61 eligibility requirements and AC 61-65H.
7. Coordinate with the DPE. Have them review the application, endorsements, and aircraft maintenance logs prior to the day of the practical test, if possible.
8. Don't be afraid to ask questions. DPEs and other flight instructors are great resources.
9. Have an experienced instructor review your student's eligibility.
10. Be onsite for the beginning of the practical test. If something is missing, such as an endorsement, then you could potentially fix the issue, and the practical test could continue.

11. If given consent by your student, join your student and the DPE for the debrief. This can be a valuable learning experience for the instructor and will help you provide better instruction to future students.

Another way to increase efficiency and help reduce wait times is to only schedule the practical test when your student has completed training and is fully prepared. Also, schedule with only one DPE, and if you must cancel, make sure to cancel as far out as possible so the DPE can schedule another applicant.

### Airworthiness and Maintenance

Next, let's talk about aircraft airworthiness and maintenance records. We spoke with ASIs and DPEs about common airworthiness issues that have caused a practical test to be canceled. Here are the issues:

1. All items of inoperative instruments and equipment *don't* meet the requirements of 14 CFR section 91.213(d), (placarded, deactivated, or removed and a maintenance record made if appropriate).
2. Aircraft registration is not current and valid.
3. Airworthiness certificate is not onboard or legible with the correct registration number.
4. Missing fasteners.
5. Compass correction card is not legible.
6. Missing or broken static wicks.
7. Frayed or damaged seat belts.
8. Missing seat stops.
9. Broken or cracked fairings.
10. Missing or illegible placards.
11. Oil, fuel, or hydraulic fluid leaks.
12. GPS database for instrument practical tests is out-of-date.

Please also review aircraft maintenance records, and check for the following:

1. Annual inspection completed within the last 12 calendar months.
2. Airworthiness Directive compliance record indicates no one-time or recurring ADs are due.
3. 100-hour inspection completed if the aircraft is used for hire.
4. Pitot static and transponder check within the last 24 calendar months.
5. VOR check within the last 30 days.
6. Any open discrepancy in the aircraft dispatch log.
7. Weight and balance.



If you have a question about a maintenance issue, please bring it to the attention of the maintenance department or mechanic. If you spotted an issue, the DPE is likely to as well. You don't want a practical test to be canceled because of a missing cowl screw. Even better, have maintenance personnel go through the aircraft records with you and do a comprehensive aircraft pre-flight with them present before the practical test. You may be able to address any problem before it becomes an issue for the DPE.

The FAA is listening to the aviation community, and we are aware of the lengthy wait times to get to the practical test. Flight instructors report delays of one to two months when they contact DPEs to schedule. The FAA has recently stepped up efforts to add additional DPEs to ensure better utilization of the designee representatives.

In the meantime, flight instructors can help by following the tips in this article to make sure your student does not get turned away on the day of the practical test because of eligibility issues or an unairworthy aircraft. »

Kenny Bain is a private pilot and an A&P with Inspection Authorization. He works as an FAA aviation safety inspector with the General Aviation and Commercial Division's Delegation Group.

Regina Brock holds an ATP and is a flight instructor (CFI, CFII, and MEL). She works as an FAA aviation safety inspector with the General Aviation and Commercial Division's Delegation Group.

#### LEARN MORE

"Supply and DPE Demand," *FAA Safety Briefing*, Sep/Oct 2023  
[bit.ly/FAASB\\_DPEdemand](https://bit.ly/FAASB_DPEdemand)

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# FAAST-Track

## Your Flight Instructor Success

*How the FAA Safety Team Supports the Flight Instructor Community*

*By Tom Hoffmann*



Earning a flight instructor certificate is no easy task. It requires a great deal of study, dedication, and a passion for aviation and teaching. Like any profession, it also requires significant continuing education to stay sharp, whether with the latest cockpit technology, changes in regulations, or how to be a more effective teacher. With the constraints of a busy schedule, it can be challenging for an instructor to find the right resources to help with continuing education. The good news is you have an ally right here in the FAA to help with this endeavor. The FAA Safety Team (FAASTeam) and its predecessor organizations have been strong advocates for the flight instructor community for many decades, offering numerous resources to improve safety, efficiency, and professionalism in the flight training arena. Let's have a closer look.

### High-Flying Forums

Probably one of the most unique and impactful ways the FAASTeam helps the flight instructor community is through quarterly forums (CFI Forums) that are held at various locations across the country. FAASTeam Program Managers (FPMs) in each Flight Standards District Office

area are tasked with coordinating and hosting these events per the FAASTeam's National Performance Plan (NPP).

As stated in the NPP, these forums "provide an in-person or online opportunity for aviation educators and evaluators to engage in dialogue to share and employ best practices in pilot training and evaluation, discuss and address local instructional challenges and opportunities, and to promote continuing education through the WINGS Pilot Proficiency Program."

Generally, two to three hours long, these forums cover a host of important operational topics broken up into a presentation segment, followed by an open discussion of local instructional issues and best practices. The presentation materials are produced by the National FAASTeam and typically aim towards supporting accident mitigation strategies developed by the General Aviation Joint Safety Committee (GAJSC) and highlighting nationwide operational issues. The presentations also cover perennial safety subjects like professionalism and proficiency, and they can be tailored to address more specific instructional-based issues derived from recent data. The current fiscal year's theme covers human factors and safety culture and how



instructors can better integrate these concepts within a learner pilot's training curriculum.

FPMs are free to augment the forum curricula as they see fit, sometimes recruiting the help of volunteer FAASTeam Representatives (Reps) or bringing in guest speakers to share their expertise. For some FPMs, this means inviting some of the local designated pilot examiners (DPEs) to pass on what they're seeing regarding any negative trends and/or shortfalls in certificate and rating applicants.

"I always try to encourage interactive exchange with attendees," says Scott Allen, an FPM from the Honolulu area. "It's critical to allow for questions and comments — particularly with some of our senior instructors — to point out areas we can improve. The more interactive it gets, the better it is for meaningful takeaways."

### There's Still Room to Zoom

While the pandemic relegated flight instructor forums to a virtual format, these days, in-person presentations are alive and well — a preference for FPMs like Allen who place value in being able to read the room and see what kind of reactions they're getting. Many flight instructor forums now maintain a hybrid approach, allowing for both online and in-person participation. In either case, there is the added benefit of networking and collaboration with like-minded individuals.

Flight instructor forums may be held at FAA facilities, airport buildings, or be hosted by flight schools or industry members. "I like holding the forums at a flight school and will invite other flight schools to attend as well," says Allen. "Many are very cooperative and enjoy working with us, sometimes offering pizza or snacks to entice more attendees."

Attendance can vary depending on the time of year and location, but the virtual option has allowed many areas to attract about 25 to 30 total participants. Keep in mind that with an event like this, bigger doesn't always mean better. "A smaller group can lead to a more intimate and meaningful discussion," says National FAASTeam Products Manager John Steuernagle. He also points out there is a force multiplier with these forum attendees (whether in small or large audiences) who are trained to help impart the knowledge they gain at the forums.

One important footnote on the flight instructor forums: you don't have to be an instructor to attend. "If you're aspiring to be a future flight instructor, you're welcome to attend, too," adds Steuernagle. "It's an opportunity to interact with your future peers and pick up a lot of good tips on how to be a good instructor."

### Beyond the Forum Stage

More good news: The learning opportunities certainly don't stop there! The FAASTeam regularly hosts seminars and webinars featuring flight training-related content throughout the country and provides outreach directly to

**The FAASTeam has been a strong advocate for the flight instructor community for many decades, offering numerous resources to improve safety, efficiency, and professionalism in the flight training arena.**



flight schools and at several major aviation events like the Sun 'n Fun Aerospace Expo and EAA AirVenture. FPMs and Reps are also actively involved with promoting and participating in the FAA's Runway Safety Action Team meetings and pilot/air traffic controller forums. These events are uniquely designed to bring together pilots and instructors with controllers and airport authorities to



**One of the most unique and impactful ways the FAASTeam helps the flight instructor community is with quarterly forums (CFI Forums) that are held at various locations across the country.**

discuss local safety issues, including surface safety concerns or the impact of airport construction projects.

Notifications about upcoming flight instructor forums, seminars, or local safety meetings are sent via email through the FAASTeam's Safety Program Airmen Notification System, or SPANS. If you're not receiving these notices, check your settings or set up your account at [FAASafety.gov](https://FAASafety.gov). Note that there is a specific email preference setting for instructors and flight schools.

### **Come Online with Us**

Speaking of [FAASafety.gov](https://FAASafety.gov), getting connected to and familiar with the FAASTeam's website presents another vast resource available to flight instructors. There are several hundred online courses and training materials designed to enhance a flight instructor's knowledge and skills. These include training and testing scenarios, handbook links, best practices, and tips on how to conduct an effective flight review. To view these and other materials, navigate to the online library or the online resources section under the Resources tab on [FAASafety.gov](https://FAASafety.gov).

WINGS is an important part of promoting pilot safety, allowing any airmen at any level to pick and choose a path to maintaining proficiency. Flight instructors play a special role when it comes to WINGS since they're validating the instruction taking place.





With that in mind, flight instructors will want to take note of the Instructor Portal section of [FAASafety.gov](http://FAASafety.gov) where they can directly issue WINGS credit to airmen without having to log in. (Note – you can also go to [EZWings.net](http://EZWings.net) to validate requested credit). Browse the Instructor Tools to learn more about how the program works, how to validate and issue WINGS credit, and how WINGS activity can help you renew your instructor certificate. (Please also see the Advisory Circular in the Learn More section). We hope you'll see the value in this program and encourage its use with your students.



### Holding FAAST To Safety

As you can see, the FAASTeam provides critical support to the flight instructor community by providing access to education and training in a variety of mediums. “We’re all in this together,” says Allen. “And the FAA is firmly committed to being a valuable resource to help you succeed in furthering the field of flight training and aviation safety.” ➤

#### LEARN MORE

FAA Safety Team website  
[FAASafety.gov](http://FAASafety.gov)

Advisory Circular 61-91J, *WINGS Pilot Proficiency Program*  
[bit.ly/AC61-91J](http://bit.ly/AC61-91J)

## Don't Get Trapped in an Illegal Air Charter Operation

### Learn About the Top 3 Persistent Safety Issues ➤



#### Private Pilots

Misinterpretation of privileges and limitations in connection with a business or employer.



#### Commercial Pilots

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# GROUND IS GOOD

## The Ins and Outs of Effective Ground School Instruction

*By William E. Dubois*

Learning to operate the airplane is only a small part of learning how to fly. There's also aerodynamics, airspace, avionics, communications, navigation, medical factors, regulations, risk management, systems, weather, weight and balance, and much, much more.

In short, much of learning to fly is done on the ground.

Traditionally, these ground studies were part of a ground school — a dedicated classroom environment with professional instructors following a set training curriculum. In today's world, many colleges and universities still provide dedicated ground classes, but in the flight school environment, ground instruction is often a mix of asynchronous online learning and flight instructor responsibility.

### The Flight Instructor as the Ground Instructor

While certificated ground instructors still exist (see the “Getting Grounded” sidebar), all certificated flight instructors are, in fact, ground instructors. If you are a CFI, your certificate grants you all of the privileges of a ground instructor.

But are you a good one?

Ground instruction is uniquely different from in-flight instruction, and being an effective ground instructor requires more advanced prep than in-flight instruction. The good news is that it's a largely one-time effort, and an added benefit is that — done correctly — you'll have better-prepared learners sharing the flight deck with you. They will be learners who pick up on the flight lessons more quickly and with a higher degree of safety.



(Photo by Jeff Smith)



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## Elements of Effective Ground Instruction

Because of the incredible breadth of knowledge that makes up a course of ground study, the organization of ground lessons is essential. That said, there's no single way to organize the knowledge areas. While much of the knowledge requirements for pilots comes from Title 14, Code of Federal Regulations (14 CFR), parts 61, 65, and 91, there's no need to organize your material in the same way that it appears in the regs — in fact, it may be detrimental to do so. The regulations are organized in a certain manner for legal reasons, not educational clarity.

Start by making a master list of the primary subject areas you will teach. This master list is your *training syllabus* — the broad sweep of the material you will cover, for instance, private pilot ground knowledge. This list should include all the various sub-topics that need lessons, each of which, in turn, will need a brief lesson plan. (More about those in a second.)

Once you have your master list, step back and use your experience and mastery of the knowledge to arrange the subjects to be taught in a way that makes logical sense to you. Even if you are designing your ground lessons as a follow-on to a pre-packaged course of self-study, it is still possible to rearrange the packaged content to better reflect your overall course of flight instruction.

The organization of the material should reflect your training philosophy. Of course, some study elements serve as prerequisites for others; for instance, it would be difficult to teach a learner about the horizontal component of lift if they had not previously been introduced to the four forces of flight. Ideally, ground lessons should be integrated with flight lessons and share common objectives, letting your learner connect theory with application.

As with the regulations, while the order of the appropriate Airman Certification Standards (ACS) document doesn't necessarily dictate an appropriate teaching order, a review of the aligned ACS provides for excellent calibration between the core subjects to be taught and the associated risk management tasks, while additionally assuring that no test subject areas are overlooked.

As to lesson plans, they don't need a lot of detail, especially if you are creating them for your own use. If you can read it out loud like a bedtime story, you did it wrong. Instead, it should be a succinct outline. The purpose of the lesson plan is to keep you on track, like a checklist. (Exception to the rule: if you are a chief instructor creating lesson plans for other instructors, more detailed instructions may be required.)

And here's a tip: If you ever wish your student knew something in the air, that's your cue that you should have covered the topic in ground sessions first.

## Tips for Being a (Highly) Effective Ground Instructor

A well-thought-out training syllabus with easily deployable lesson plans is your primary strategy for effective ground instruction. But how you use those tools is where the rubber meets the runway. Here are some tips for using those tools to be a highly effective ground instructor:

- **Go group** — Ground learning is more effective as a group event than it is in a one-to-one setting. The learners benefit from each other's questions and perspectives, and this remains true even if all the learners aren't 100% matched in their flight progression — the more experienced students become mentors to the less experienced. Group ground sessions are also a more efficient use of your time, and they can be logged with the same impact as individual ground instruction.
- **Teaching isn't telling** — It's important to note that ground instruction and lectures are *not* the same thing. Don't just stand in front of your students and lecture. Instead, you are a tour guide whose job is to show people around your world.
- **Watch your language** — be mindful to never use a word or term you've not yet introduced and minimize using acronyms with primary students. With more advanced students, define any acronym at least two times before deploying it regularly. It takes time to learn a new language, and your students are learning "aviation speak," a strange new language you've been fully fluent in for so long you might not even give it a second thought without conscious effort.
- **"Dumb" it down** — Keep concepts simple at first. For instance, don't start an airspace lesson by drawing the "mushroom forest" on a whiteboard. Instead, back up and deploy an analogy to explain that airspace — like state lines on a map — are real boundaries but are invisible in the physical world. And that, like with states, the local "laws" vary with the jurisdiction. Then proceed into the categories of enroute airspace vs. airport airspace and build from there. And fer cryin' out loud, don't start spewing out weather minimums until your learners have mastered the basic lay of the land.
- **Energy management, classroom style** — Keep your ground instruction sessions short. Don't spend too much time on any one subject. Consider several "bite-sized" mini-lessons in each session. Be lively and animated. Provide frequent breaks. Aviation is exciting, there is no reason for a ground session to be boring.
- **Minimize words via pictures** — Don't rely on words if visuals can tell the story better. Use models and visual aids, including electronic aids such as animated videos, to help learners grasp complex concepts more quickly.



- **Deploy “war stories”** — Your experience is pure gold. Use your personal real-world experiences to illustrate the concepts that you are teaching. War stories provide a real-world framework for theoretical knowledge, turbocharge understanding, and set the stage for accelerated application.
- **Utilize learner “read-backs”** — As a cross-check that your teaching is being effective for student learning, frequently ask for “read-backs” from your learners. Have them re-state, in their own words, the key aspects of the lesson, so you can ensure that what they have gotten out of it was what you intended for them to learn. This not only ensures that your lessons are being effectively taught, but it also helps you hone your teaching skills.

### Teaching with an Asynchronous ‘Partner’

There are many self-paced asynchronous home-study ground school products, and many of them are high quality. However, there are stumbling blocks that can reduce their effectiveness as a tool. Learners often deploy them at the end of their day when they are tired, and as there is no proctor monitoring, there is nothing to prevent “tune-out.” The screen time to learning ratio is many times far from impressive.

An even greater potential danger is that, with no instructor present to ensure that proper learning is taking place, there can be significant holes in the learner’s core knowledge; and worse yet, there is no oversight to prevent incorrect learning. An additional weakness of asynchronous products is that there is no quick mechanism for students to ask questions or get clarification — short of the pause-rewind-relisten method.

There is nothing inherently wrong with asynchronous learning, and it can be an excellent force-multiplier for a small instructional staff. But, if you use asynchronous learning with your students, be sure to constantly review assigned lessons with them in person to ensure the lesson was internalized as intended rather than relying on quiz scores from the product, which doesn’t always reflect learner understanding.

### Ground Matters

Some flight instructors treat ground school as an afterthought or something that can be delegated to a pre-packaged course of home study with no effort on the part of the flight instructor. That’s doing discredit to your learners, and it makes your job harder than it needs to be.

Consider one of the largest successful outputs of new aviators in history — the training programs our country developed during World War II. Even with the urgency of a global war, pilot candidates received 225 hours of ground school to 60 hours of flight time, nearly a 4-to-1 ratio.

Do you think that there is less ground knowledge to master in current times? Or more?

If three-quarters — or more — of the job of teaching learners how to fly happens on the ground, then effective flight instruction **must include** effective ground instruction. ➤

William E. Dubois is the ground school program manager for Infinity Flight Group and a widely published aviation writer. He holds a ground instructor certificate with all ratings, a commercial pilot certificate with an instrument rating, and is a dual-accredited master ground instructor.



## Getting Grounded (In a Good Way)

Like the flight instructor certificate, the ground instructor certificate is a separate piece of plastic. And — like aviation maintenance technician and aircraft dispatcher certificates — it does not necessarily require the holder to have a pilot certificate. It is a stand-alone teaching credential that empowers its holders to teach ground classes, endorse candidates for knowledge tests, and — if senior enough — even provide training to flight instructor candidates.

Additionally, like many other FAA certificates, there are multiple ratings that are achievable. The certificate is issued with a basic rating that grants the holder the authority to teach ground school for private pilot and below and sign off candidates for those knowledge tests. The advanced ground instructor rating gives the instructor the authority to teach commercial subjects and sign off candidates for the commercial knowledge test. And finally, the instrument ground instructor rating confers the authority to teach instrument ground and sign off candidates for the instrument knowledge test.

Logically enough, getting a ground instructor certificate is a ground operation. It requires passing a series of knowledge tests, generally ranging from a minimum of two tests up to a maximum of four tests, depending on what ratings are sought. The basic requirements are to be at least 18 years of age and be English proficient. All ground instructor candidates must pass a knowledge test on the Fundamentals of Instructing (unless they already hold a CFI certificate, are currently certified as a teacher at the 7<sup>th</sup>-grade level or higher, or are employed as a teacher at an accredited college or university), and pass specific knowledge tests for each rating desired. These are stand-alone knowledge tests, not the same knowledge tests that airmen need to pass as part of their certification. No endorsement is required to take any of these written tests.

The privileges and limitations of ground instructors are codified in 14 CFR sections 61.211 to 61.217 and further expanded upon via several letters of interpretation. Ground instructor privileges include providing basic aeronautical instruction and written test prep, providing the required pre-solo and solo cross-country ground training for student pilots, and endorsing logbooks to reflect ground training. Ground instructors can additionally provide the required ground training for flight reviews at the certificate level that matches their instructor ratings. Ground instructors who have held their certificates for at least two years and have given at least 40 hours of instruction (or FAA-approved course ground instructors with 100 hours under their belts) can provide first-time flight instructor candidates with their required ground training and endorse the same.

Training students and pilots using flight simulators is a limited privilege carved out by a pair of letters of interpretation (Gatlin 2010 at [bit.ly/FAA\\_Gatlin2010](https://www.faa.gov/regulations_policies/interpretations/gatlin-2010) and Frick 2011 at [bit.ly/FAA\\_Frick2011](https://www.faa.gov/regulations_policies/interpretations/frick-2011)). Ground instructors may use any level of flight simulator as a method, or tool, of instruction — so long as that sim time is not logged and counted “towards meeting the aeronautical experience requirements for a pilot certificate or rating.” Additionally, ground instructors may use sims to assist pilots in maintaining general proficiency, but, again, that sim time is not loggable as a flight activity, such as the experience required for instrument recency.

Ground instructor certificates are issued without specific expiration dates, but to exercise the privilege of the certificate, the holder must meet the recency of experience requirement of 14 CFR section 61.217, which essentially requires the instructor to have been actively teaching in the previous year. A medical certificate is not required to exercise the privileges of a ground instructor certificate.



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# Inflight Insights

## Words of Wisdom from Flight Instructors

By Nicole Hartman and Rebekah Waters

**“W**hat do you want to be when you grow up?” It’s a common question we ask young people that characteristically receives common answers.

Firefighters, veterinarians, doctors, and pilots are frequent responses. Surprisingly, associate editor for the FAA is absent from most lists, but we digress. Nevertheless, understanding why the dream of flying is so appealing doesn’t take a stretch of the imagination. While there are numerous ways to make a career out of flying and the most commonly thought-of option is commercial airline pilot, becoming a flight instructor can be a rewarding and exciting option.

### Motives to Mentor

There are numerous reasons to become a flight instructor, the most obvious being the need to teach aspiring pilots and guide them through their training journey. Forecasts project that there will continue to be a demand for new pilots, and people to train them, over at least the next decade. As an instructor, you shoulder the enormous responsibility of assisting students to meet and exceed established standards by transferring the required knowledge. The five main responsibilities of aviation instructors are:

- *Helping Learners* — Instructors should help learners (students) stay motivated by making lessons enjoyable without sacrificing performance standards to make tasks easy.
- *Providing Adequate Instruction* — There are different methods for understanding new information, and instructors should get to know their students to tailor their teaching techniques to be effective.
- *Standards of Performance* — Instructors must train students to the established standards.
- *Emphasize the Positive* — Fear limits the learner’s ability to perceive; use positive motivation because positive instruction results in positive learning.
- *Ensuring Aviation Safety* — Always emphasize safety by example.

But you can’t give something that you don’t have yourself. Being an effective flight instructor requires constant education and continuous training. The benefit is the opportunity to hone your own flying skills. Teaching others compels you to revisit basic concepts and develop a deeper understanding of them and requires you to stay up-to-date with the latest developments in the aviation industry. Check out the article “FAAST-Track Your Flight Instructor Success” in this issue for resources the FAAS Team offers to support the flight instructor community.

As a flight instructor, you also have to be able to demonstrate procedures, maneuvers, and techniques to your students, enabling you to constantly practice. Additionally,







each student presents unique challenges and questions allowing you the opportunity to dive deeper into the subject matter and build upon your proficiency. The outcomes of this continuous learning process are significant enhancements of your knowledge and skills.

The talents of being a flight instructor can also be used to open doors for other employment opportunities. If you aspire to become an airline pilot, working as a flight instructor can help you gain the necessary flying experience to get hired. Additionally, the communication, leadership, and analytic skills you develop as an instructor are highly transferrable and are assets in many other career paths. So even if your journey leads you away from aviation, your experience will still be very valuable.

But the most rewarding part of being a flight instructor, and the reason you might decide to make it your career, is the opportunity to inspire and guide others who share your passion for aviation. Let's be honest, learning to fly is a challenge and comes with numerous obstacles aside from just absorbing the material. As a flight instructor, you get the chance to help shape your students' attitudes and behaviors toward safety and professionalism. Your care and support during the tough training times can make all the difference in helping your students achieve their dreams. And the payoff comes when you witness your students "get" the skills you've taught them and know that you've made an impact on not only that person's life but the aviation community and safety as a whole.

## FAQs

Flight instructors have the immense responsibility to ensure learning pilots develop the skills and knowledge required for safe flight. Obviously and justifiably, this

task comes with a lot of questions — common questions, unique inquiries, and the questions they wish more students would ask. Here's what a few flight instructors had to share from their experiences teaching.

### What are the most common questions you get from your students?

**Marcel Bernard: How much does it cost and how long will it take to become a pilot?** The short answer is that it depends. The cost is contingent on the level of certificate you're seeking, the type of aircraft you fly, where you live, and how often you train. It can take as little as three months to earn your private pilot certificate, but to become an airline pilot it takes at least two years to gain the required 1,500 hours of flight time. Weather, examiner availability, and your own availability/dedication and ability to learn the required information can also affect your training timeline.

**Allan Kash: What part of the runway do I look at when I am landing the airplane?** Answer: When turning to the final approach segment, look at the runway and join its extended centerline at the appropriate airspeed and landing configuration. Then look for an aiming point at the beginning of the runway. To ensure a stable descent profile, keep the aiming point in a fixed spot on the windshield. Maintain a stabilized approach and smoothly start the roundout when the airplane is between 10 to 20 feet above the runway threshold. During the roundout, look about 3-4 centerline stripes down the runway to get an accurate sight picture. Looking closer could cause you to flare too high and looking too far down the runway could cause you to flare too low. After the airplane has transitioned from a descending attitude to a landing attitude, continue to look down the runway until it settles a few feet above the runway. As airspeed dissipates, flare slowly and smoothly while looking slightly left of the nose toward the end of the runway. Also, use your peripheral vision to see the edge of the runway, which will help judge altitude and runway alignment as the airplane touches down. Be sure to maintain positive control of the airplane throughout the landing and after touchdown. **What can I do to improve my landings?** Answer: Practice landings frequently, maintain a stabilized approach, and use the correct airspeeds during the entire approach and landing. **When can I solo the airplane?** Answer: When you demonstrate the skills needed and do so safely.

**Joe Morra: Is flight training safe?** I initially felt that there was an expectation to convince people that flight training was "safe." One day it hit me that it was probably better to discuss that topic differently. I started responding with, the chance of us getting seriously injured or killed was very, very low sitting in this office on this particular day. I went on to explain that when we get into the training aircraft



together, the chance of injury or death certainly goes up, but most things in life worth doing involve some risk. Even crossing the street to get on a school bus or taking a ride on your bicycle can be risky. So, if students felt like flight training was something worthwhile to them, then they came to the right place. Everything flight instructors do is about lessening risk and practicing for worst-case scenarios or even minor things that can lead to bad scenarios. Now, when somebody asks me if flight training is “safe,” my answer isn’t yes or no. Instead, it is a longer conversation than they probably expected.

**Bob Raskey: What is the best way to succeed on my upcoming check ride?** Answer: The best way to succeed in passing your checkride is to focus on your training with your instructor. Ask questions often, especially to reinforce your learning curve. Keep a positive attitude throughout the ground and flight training process. Develop a post-lesson (ground or flight) review of what went right, what went wrong, and what actions to take to be better. Be sure to understand the FAA Airman Certifications Standards (ACS) for each practical test, including knowledge and flight expectations. I found success with my practical tests by continuous training reviews with my instructor and fellow classmates to reinforce my practical knowledge. I also use “chair flying” to perfect the maneuvers that will be examined.

#### What is the best or most unique question you’ve received?

**Allan Kash: Can we use an aviation training device (ATD) at appropriate times in my training?** Answer: When available, ATDs provide effective training for aircraft systems familiarization and to better understand maneuvers.

**Bob Raskey: What is the success rate of an emergency landing on the water?** The reality is that overall general aviation survival rates from ditching in the water is close to 90%. There is strong data that shows that, when faced with areas of trees, rocks, and un-improved land, properly executed water landings have a much higher success rate. The key factors to a successful emergency water landing are to maintain aircraft control, analyze the situation, and take the appropriate actions. The basic element of success in a water landing is to set the proper glide speeds for your plane. Be aware of your altitude, wind, and water conditions below. Choose the best course of action and manage your descent profile. Use “AAA” — aimpoint, airspeed, and aspect (glide angles) — to find a point on that lake where you can land and come to a stop. Make your “mayday” calls and manually activate your ELT. Try to assess the lake water to be close enough to shore but not an area of debris. Try landing into the wind in calm water, brace for impact, touchdown as slowly as possible without stalling, and be ready to egress. Expedite the egress, then assess your surroundings from there.

#### What questions do you wish more students would ask?

**Marcel Bernard:** There are four: 1) **Do you use a formal training syllabus, and do you use a flight simulator as part of your training program?** 2) **Are you able to fly at least three lessons a week with me?** 3) **Are you available to conduct flight training full-time, and will you be available for the next six months?** 4) **And finally, is there a chief flight instructor, and if so, can I meet them?** Becoming a pilot takes a certain level of determination and dedication. Getting questions like these demonstrates a student’s drive and commitment to achieving their goal.



## Meet the Flight Instructors

**Allan Kash** is an aviation safety inspector with the FAA's Training and Certification Group. Before joining the FAA, he did part-time corporate flying and became a flight instructor teaching single and multiengine students, racking up more than 5,400 hours of dual instruction time. He earned his bachelor's degree in aviation science at the University of Maryland Eastern Shore.

**Marcel Bernard** is an aviation safety inspector with the FAA's Training and Certification Group. He earned his bachelor's degree in Aeronautical Science at Embry-Riddle University

in 1984. He was a part 61/141 flight instructor and later chief instructor at Freeway Airport in Maryland for 22 years. He also worked as a corporate pilot for 3 years. He holds both an ATP certificate and flight instructor certificate.

**Joe Morra** is the inaugural Division Manager of AFS-700, the Emerging Technologies Division focused on implementing efficiencies related to drone integration. He owned and operated a part 61 flight school and went on to be school director of a part 141 flight school that has schools nationwide. Along the way, he was

an assistant chief pilot and director of operations. When not managing those businesses, he accumulated over 1,000 hours of dual flight instruction given.

**Robert "Bob" Raskey** was the 2023 National Flight Instructor of the Year. Raskey is a current FAA Gold Seal Flight Instructor; FAASteam industry member; and United Airlines Boeing 777 captain with over forty years and 23,000 hours of general, commercial, and military flight experience. Raskey has been a flight instructor and pilot examiner on various airplanes, helicopters, warbirds, and experimental aircraft.

**Allan Kash: What can I do to become a better student pilot?** Answer: Accept/complete all homestudy assignments. Always be prepared for your next flight lesson. Fly two to three times a week, and train for high proficiency, not just to pass the test.

**Bob Raskey: As a progressing student pilot, what actions do you recommend to keep my aeronautical knowledge and flight skills strong over time?** A pilot's journey through initial pilot training to the completion of a commercial or airline transport pilot certificate provides them with critically important flight skills that prepare them to enter rewarding aviation career fields. From follow-on roles as flight instructors, corporate pilots, military pilots, and airline pilots, many skill sets are learned that provide safe operations over time. Yet we can also experience an erosion of our technical and knowledge skills as flying pilots as time passes. As in many professional fields, pilots

can decline in certain flying skills due to routine actions, periods of time off, less demand for high-level systems knowledge, and extended periods of positions in non-flying roles. Also not keeping up with technological upgrades on the flight deck and with avionics systems creates a cognitive decline in systems management. Pilots can develop an "automation dependency" which reduces the fidelity of our hand-flying skills. This loss of manual flying skills has been a factor in several aviation accidents and incidents over the years. Pilots should hand fly more, stay updated with avionics generational updates, stay updated on systems knowledge, and develop a personal program of study to keep up with the rapidly challenging aviation environment.

### The Sky is Not the Limit, It's Just the Beginning

The journey to becoming a flight instructor is challenging and demanding. There is rigorous training, the need for constant learning, and the safety responsibility for your students and others in the National Airspace System (NAS). But the chance to enhance your flying skills, increase employment opportunities, and inspire and teach others earns it a top spot on our "What do you want to be when you grow up?" list. ▶

Nicole Hartman and Rebekah Waters are *FAA Safety Briefing* associate editors and technical writer-editors in the FAA's Flight Standards Service.

#### LEARN MORE

FAA *Aviation Instructor's Handbook*, Chapter 8  
[bit.ly/AvInstructor](https://bit.ly/AvInstructor)



Experienced instructor and *FAA Safety Briefing* contributor Karen Kalishek instructing in the cockpit.



## STEERING FOR SAFETY

Any regulated industry has its inside baseball events, and aviation is no different. A product of that metaphorical contest is a host of acronyms representing various groups or interests. You're probably familiar with the big ones like the Aircraft Owners and Pilots Association (AOPA) and Experimental Aircraft Association (EAA). You might even know others like the General Aviation Manufacturers Association (GAMA) or the National Business Aviation Association (NBAA). But one you may not have heard about, in part due to a recent name change, is the General Aviation Joint Safety Committee (GAJSC), formerly the General Aviation Joint Steering Committee. Composed of a mix of government, academia, and industry members, the GAJSC is designed to use a data-driven non-regulatory approach to reduce risk in the GA world. Its mission is to steer GA flyers toward a better understanding of the risks they face and how to mitigate them. To do this, the GAJSC has several risk mitigations, or safety enhancements (SEs), covering flying, maintenance, and aircraft design. Here are a few that are pertinent to instructors.

### Change, Change, Change

It's pretty basic that change can introduce risk. But change is a given fact of life. That's why the GAJSC has SE-05: *Transition Training*. This SE draws together resources for pilots and instructors doing transition training. These web-based tools help pilots prepare for training and instructors design proper training to ensure pilots are ready for their new aircraft. The GAJSC's input is also encapsulated in

Advisory Circular 90-109A, *Transition to Unfamiliar Aircraft*, which provides best practices for pilots and instructors.

Additionally, SE-07, *Utilization of Type Clubs*, is a crucial resource for pilots transitioning to a new aircraft. Type clubs are great hubs for aircraft-specific information. From maintenance recommendations to flying tips, there's no need to reinvent the wheel when organizations like type clubs have already done the work. Any instructor who flies extensively in a specific aircraft type would be wise to get involved with a type club.

### Brushing the Rust Off

Another area of keen interest for instructors should be getting pilots back into the sky safely. From time to time, many pilots have had to take a break from flying. One of the first steps back is to work with an instructor to sharpen those flying skills back to a functional state. That's why SE-08 covers *Flight Training After a Period of Inactivity*. Another critical topic in this arena is SE-21, *Risk-based Flight Review*. SE-21 is complemented with an FAA resource, *Conducting an Effective Flight Review*, developed by a GAJSC collaborative team ([bit.ly/4dH9jiB](https://bit.ly/4dH9jiB)). This subject fits hand in hand with SE-08 — in that the flight review should be tailored to the pilot, and this is especially critical when the pilot has been away from flying for a while. In such cases, a simple flight review may not be sufficient to address the risks involved, and as an instructor, you should work with your students to ensure they understand why. Setting clear expectations early in the process can help avoid problems later.

### Setting the Tone

As an instructor, you are the vanguard of GA. It's important to remember this when working with students. It's easy to fall into complacency and relax on issues since it probably won't be an issue for this flight. But your students are watching. They don't see skipped steps or procedures as a time-saving measure based on a reasonable decision, but as a general approach that devalues the skipped procedure. You may not feel you need to preflight the airplane as thoroughly if you just finished a flight in that airplane 15 minutes ago. You may not need to get a weather brief from an airport you just arrived from, which is only a short flight away. You may be right, but what you're modeling isn't. SE-03, *Aeronautical Decision Making (ADM)*, and SE-33, *Safety Culture*, touch on these circumstances. Safety culture relies on you setting a good example, and skipping procedures may limit opportunities to practice ADM in training, which is a critical skill. Be sure to check out the new FAASTeam course on safety culture at [bit.ly/ALC-1175](https://bit.ly/ALC-1175).

The current name for GAJSC is a better representation of what the organization focuses on, which is safety. But the previous name did emphasize that we're only steering with advice and resources and need the help of aviation educators to get the safe outcomes we all want.

#### LEARN MORE

GAJSC Safety Enhancements  
[gajsc.org/se](https://gajsc.org/se)



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## DRONE TESTING 1, 2, 3

Thinking about getting your remote pilot certificate to fly more than recreationally? If you read this column in the Sep/Oct 2023 issue, you know that a lot of everyday drone activities actually fall under part 107. This means that, unless you are a part 61 pilot with a current flight review, you're going to have to take a test. If you are starting to feel some test anxiety, let me set you at ease. Getting your remote pilot certificate takes just three easy steps!

### 1. Get Ready

First, let's make sure you're eligible to take this test. The requirements for being a remote pilot, besides passing the Unmanned Aircraft General–Small (UAG) knowledge test, are to be at least 16 years old; read, speak, write, and understand English; and be physically and mentally fit to safely fly a drone.

The test is 60 questions, and you are given two hours to complete it. That means you'll have about two minutes for each question. You'll need to score 70% or higher to pass. So, before you take this test, you'll want to make sure you've studied. The FAA has three free resources you can use to study: the Airmen Certification Standards (ACS) for Unmanned Aircraft Systems, the Remote Pilot Study Guide, and online sample questions. These can be found at [bit.ly/107Study](https://bit.ly/107Study).

**Getting your remote pilot certificate takes just three easy steps: get ready, take the test, and stay current.**

But what if you need more help than this to be prepared? Keep in mind, people have different learning styles, so you'll need to study the way that works best for you. The FAA Safety Team (FAASteam) has volunteers called DronePros who work closely with the FAA to promote safety in their local area. They are trained and equipped to plan events and give presentations. If you're interested in learning from a DronePro, go to [bit.ly/FAASteamDirectory](https://bit.ly/FAASteamDirectory) and check the DronePro box. There are also free and paid commercial test prep options, but the FAA does not endorse or approve these companies, so make sure you research these options if you decide to use one.

### 2. Take the Test

The test costs \$175 and is available by appointment only. To make an appointment, you'll need an FAA Tracking Number (FTN). This is how the FAA will identify you throughout your aviation career. To get one, all you need to do is make a profile on the Integrated Airman Certification and Rating Application (IACRA) at [iacra.faa.gov](https://iacra.faa.gov). Next, locate an FAA-approved Knowledge Testing Center near you and schedule your test ([bit.ly/Testingcenter](https://bit.ly/Testingcenter)). On the day of the test, you must bring your government-issued photo ID. You are also allowed to bring certain test aids, like protractors or calculators. See Advisory Circular 60-11C for a full list ([bit.ly/AC60-11C](https://bit.ly/AC60-11C)). Most people pass this test the first time, but if you don't, don't worry — you can do some additional studying and take the test again after 14 days.



### 3. Stay Current

Once you pass your test, complete your application in IACRA, and, after your TSA security background check is complete, you now hold a remote pilot certificate. You'll receive your permanent certificate in the mail. If you're not a fan of tests, I have good news: you never have to take this test again — as long as you stay current. So, make sure you take the Part 107 Small UAS Recurrent (ALC-677) online training course every 24 months. The course is free and available at [bit.ly/ALC667](https://bit.ly/ALC667).

Becoming a remote pilot opens up a world of possibilities for you and your drone. Don't let the knowledge test stand in your way. Remember: it's just three easy steps: get ready, take the test, and stay current.

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

#### LEARN MORE

The Recreational UAS Safety Test (TRUST)  
[bit.ly/UAS-TRUST](https://bit.ly/UAS-TRUST)

Become a Certificated Remote Pilot  
[bit.ly/4bR3T2l](https://bit.ly/4bR3T2l)



## THE DOWNLOW ON DMES

The FAA has used designees since 1927, when it first appointed fifty doctors as aviation medical examiners (AME), but it wasn't until the FAA Act of 1958, that legislation allowed a wide variety of designees to issue certificates. Designees, who act as surrogates for the FAA, provide quick service to the public and reduce overall government costs. Today, designated mechanic examiners (DME) ensure the competency and proficiency of aircraft maintenance personnel. From inspecting aircraft to issuing certifications, DMEs have an important role in keeping our airspace safe.

### Serving the Community

DMEs are not FAA employees, but they have the authority to assess candidates to ensure they meet FAA standards by conducting oral and practical tests. Appointed by the FAA under 14 CFR section 183.25, a DME is responsible for examining and assessing the competency of individuals involved in the maintenance of aircraft. They are given special authority to administer testing to aspiring aircraft mechanics by the local Flight Standards District Office (FSDO). FSDOs decide the number of examiners needed. This number will vary depending on workload, need, and how many the office can manage.

Becoming a DME requires an extensive background in aviation maintenance, coupled with years of practical experience. The FAA requires DMEs to hold a valid aviation mechanic certificate and possess the technical knowledge and experience required for aviation mechanic certification. Applicants who wish to become DMEs are evaluated by a panel to make sure they are well qualified to do the job. DMEs must also demonstrate they have the



necessary tools and equipment needed to administer testing. Whether assessing a candidate's ability to troubleshoot complex aircraft systems or ensuring compliance with regulatory standards, DMEs are unwavering in their commitment to upholding aviation safety.

In FY 2023 there were 247 active DMEs. They conducted 17,142 tests and issued 14,451 mechanic certificates. DMEs set a high standard of airmanship and safety through personal example and represent the FAA and its workforce to the public in a positive manner. DMEs help to ensure that we continue to have the safest aviation system in the world.

### Not Community Service

Like other FAA designees, DMEs are allowed to charge reasonable applicant fees for the services they provide to the public. They must make sure that the applicant understands all fees charged, including the fee for retesting after failure before they accept the airman certificate and/or rating application. Since DMEs are private individuals acting as representatives, they are only allowed to take

payments from the applicant or on behalf of the applicant.

"There is projected to be an A&P shortage, and DMEs are needed to help with that shortage," says Jennifer Lentz with the Airworthiness Delegation Section of the FAA's General Aviation and Commercial Division. "Without DMEs, applicants won't be able to complete the testing process to become a certificated mechanic." Learn more about becoming a DME at [bit.ly/3UIbV8b](https://bit.ly/3UIbV8b).

### Guardians of Safety

In the intricate tapestry of aviation safety, FAA Designated Mechanic Examiners are the unsung heroes who ensure that every applicant has achieved a level of competency to be able to maintain and inspect aircraft safely and embody the highest standards of professionalism and expertise. Their contributions are indispensable in preserving the integrity and safety of the skies for generations to come.

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



## NEW ACS FOR HELICOPTER FLIGHT INSTRUCTORS

New Airman Certification Standards (ACS) for helicopter flight instructors took effect May 31 to ensure that helicopter flight instructors have the knowledge, skills, and ability to teach students how to fly and manage risks consistent with someone acting as the pilot-in-command.

The Flight Instructor for Rotorcraft Category Helicopter Rating standards is part of across-the-board ACS updates that also took effect May 31. The standards cover a range of specialties for airplane, helicopter, and powered-lift pilots.

The FAA drew upon the expertise of organizations and individuals across the U.S. and some international aviation and training communities to develop these standards, including the helicopter flight instructor.

“Is this person well qualified?” said James Ciccone, an FAA aviation safety inspector who helped usher the standards through the federal regulatory process. “Is this person safe? This helps answer that.”

The ACS incorporates and supersedes the Practical Test Standards (PTS) that, up until the ACS, had set the FAA parameters for testing pilots and flight instructors. FAA officials call the ACS an “enhanced” version of the PTS because it adds task-specific knowledge and risk-management elements into each PTS area of operations and tasks. They add that the ACS provides “the single-source set of standards” for both the test’s knowledge section and the practical or skill exam.

Other ACS benefits include:

- It clearly tells applicants, instructors, and evaluators what an airman must know, consider, and do to pass the knowledge test and

the practical test for an airman certificate or rating.

- It shows how the required knowledge, risk management, and skill elements for each area of operation/task are connected.
- It defines expectations and behaviors for risk management and connects them to specific tasks.
- It gives context for the “special emphasis” items from the PTS.

To show an example of how the ACS is structured, let’s take a look at the hover taxi task skill section that requires helicopter flight instructor applicants to demonstrate and simultaneously explain while in a helicopter how to:

- Complete the appropriate checklist(s).
- Receive and correctly read back clearances/instructions, if applicable.
- Use an airport diagram or taxi chart during taxiing, if published, and maintain situational awareness.
- Comply with airport/heliport taxiway markings, signals, and signs.
- Maintain powerplant and main rotor (Nr) speed within normal limits.
- Maintain a straight ground track within  $\pm 2$  feet of a designated ground track.
- Maintain recommended hovering altitude,  $\pm 1/2$  of that altitude within 10 feet of the surface, if above 10 feet,  $\pm 5$  feet.
- Hover taxi over specified ground references, demonstrating



forward, sideward, and rearward hovering and hovering turns.

- Maintain a constant rate of turn at pivot points.
- Maintain a position within 2 feet of each pivot point during turns.
- Make a 360-degree pivoting turn, left and right, stopping within 10 degrees of a specified heading.
- Make smooth, timely, and correct control application during the maneuver.
- Analyze and correct common errors related to this task.

The industry has used the ACS to help ensure that its handbooks are aligned with the federal standards. The FAA in turn has incorporated industry recommendations into the ACS.

The bottom line is that all of this is for safety. “Safe operations in today’s National Airspace System (NAS) require the integration of aeronautical knowledge, risk management, and flight proficiency standards,” reads the introduction for the ACS for rotorcraft category helicopter flight instructors.

The new ACS is a step forward in that direction.

Gene Trainor is a technical writer/editor in the FAA’s Aircraft Certification Service.

### LEARN MORE

*Flight Instructor for Rotorcraft Category Helicopter Rating (FAA-S-ACS-29)*  
[bit.ly/FAAACS](http://bit.ly/FAAACS)





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

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



### Previous Presentations

I signed up for National Association of Flight Instructors (NAFI) - Clinical Aspects of Pilots Mental Health and was unable to attend the session (Select #CE03128026). Have the classes been recorded so that I can access this at a later date?

— Russell

Hi Russell. Thanks for reaching out! Sorry to hear you missed the monthly MentorLIVE session, but fortunately you can access previous broadcasts at [nafinet.org/mentorlive-archive](https://nafinet.org/mentorlive-archive). These programs

feature subject matter experts from many aspects of the flight instruction industry and are focused on helping flight instructors succeed in their training endeavors. And bonus — all presentations are WINGS approved! So be sure to check back often for upcoming broadcasts and review the archives for previous presentations that might be valuable to you.

### From the FAA's LinkedIn Page "Thank God for My Instructor"

In a recent episode of the FAA's podcast "The Air Up There," Victoria "V" Ross shares her challenging journey to obtaining her private pilot's certificate. When asked about her first solo flight, she credits her instructor's support and patience to achieve her goal.

Victoria: "It was scary. It was so scary. First of all, it took me so long to



solo because I had a crippling fear of flying the plane by myself but thank God for my instructor. He was so patient with me and he's like, I know you're ready V. It's the perfect time. There's zero wind. There's no one in the traffic pattern. It's early morning. These are the perfect conditions. You're doing it and I'm like, you sure? He's like, no, you're doing it. And I'm like, okay and then I did it and I was just like, well, I'm done. Give me my certificate right now. Like I passed. I'm ready."

Victoria is currently working on her flight instructor certificate. Afterward, she plans to get her instrument flight instructor rating and start building the 1,500 hours necessary to become a commercial airline pilot.

Commenters on the FAA's LinkedIn page, including her former instructor, expressed their support:

Listen to this podcast and other episodes at [youtube.com/@FAAnews/](https://youtube.com/@FAAnews/) podcasts.



For more stories and news, check out our blog "Cleared for Takeoff" at [medium.com/FAA](https://medium.com/FAA).

Let us hear from you! Send your comments, suggestions, and questions to [SafetyBriefing@faa.gov](mailto:SafetyBriefing@faa.gov). You can also reach us on X (formerly known as Twitter) @FAASafetyBrief or on Facebook at [facebook.com/FAA](https://facebook.com/FAA).

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



## REACHING NEW HEIGHTS

*If I am walking with two other men, each of them will serve as my teacher. I will pick out the good points of the one and imitate them, and the bad points of the other and correct them in myself.*

— Confucius

The educators we encounter in our lives, whether in the classroom or the cockpit, have a unique ability to help guide us, mold us, and make us better people (and pilots). And it's not just the amount of knowledge they impart; it's how they deliver it, so it sinks in and makes an impression. This is not an easy task given how people learn and appreciate things in infinitely different ways.

While the schoolteacher and flight instructor professions might seem worlds apart, there are several parallel tracks in terms of roles and responsibilities that can have a lasting impact on a student's future success. I credit these experiences with helping me reach new heights, literally and figuratively.



Looking back, we can all probably recall a few outstanding academic teachers who made a significant impact on our learning and maybe even our career aspirations. I recall a high school English teacher who saw some potential in me during our in-class creative writing exercises. Her constructive criticism of my prose helped me identify some weak areas, but also take note of precisely where I excelled. I'm sure I had other good English teachers during my schooling, so it's funny how some of those interactions, even the seemingly subtle ones, resonate with us and stick out in our minds.

On the flip side, I'm sure everyone can similarly recall some not-so-good educators who seemed much less inclined to impart their wisdom. My AP Calculus teacher immediately comes to mind. Convinced that no one in the class was even capable of learning the subject aside from one or two students, he proceeded to teach just those students while the rest of us were instructed to read a book or take a nap. Seriously! I quickly dropped the class and was resigned to taking it in college. As it turns out, I had a great calculus teacher during my freshman year in college who made learning the sometimes-intimidating subject fun with real-world examples. I had no desire to become a mathematician after that, but it did show how the right teacher can make a difference, even with a difficult subject.

My experience with aviation educators is not all that different. As I've pointed out here in previous On Final columns, my flight training was a bit of a roller coaster ride, but I did my best to take away something

positive in every case. There were some instructors who seemed to be biding their time, while others took a genuine interest in helping me work on my weaknesses and went out of their way to help me become a better aviator. Many of my flight instructors also helped underscore the sheer fun of flying, a facet of flight training that can — but most certainly shouldn't — be overlooked. We can be safe and still have fun, right?

Much like a classroom teacher, an aviation educator should endeavor to take a personal interest in learners, offer constructive criticism where and when needed, and help their students see how to improve. It's important to also set a good example, strive to be courteous and professional, and continually demonstrate the qualities of a good airman.

These actions can have a lasting and positive impression on students. With GA instructional flying being significantly higher these days — accounting for nearly one-quarter of hours flown according to 2022 FAA survey data — it's more important than ever to model these attributes to cultivate confidence, advance sound decision-making, and contribute to the overall safety of the national air-space system.

The education occupation is a mighty responsibility, but the rewards of seeing your students succeed and shaping their future in a positive light can make it all worthwhile. It's not lost on me that as I write this, it just so happens to be National Teacher Appreciation Week. However, I'd say it's always a good time to honor and acknowledge all teachers far and wide, on the ground and in the air. We appreciate you!



PAUL CIANCIOLO

## ADINA PAPP

*FAA Team Program Manager, FAA's Albany Flight Standards District Office*

Aviation education is a passion for Adina Papp. Flying is in her DNA. She even met her pilot-husband while attending EAA AirVenture in Oshkosh.

Adina grew up in Boonville, N.Y., spending time with family at the local grass strip. And four generations of pilots — from her grandfather, father, and herself to her son and his wife — have flown their family-owned Piper PA-22 Tri-Pacer. The family fleet also includes a Piper PA-18 *Super Cub*, Piper J-3 *Cub*, Piper PA-11 *Cub Special*, and Aeronca Model 7AC *Champ*.

She learned to fly while attending Murray State University, working for the local fixed-based operator (FBO) pumping fuel and mowing lawns to pay for her wings. She then continued commercial, instrument, and flight instructor training.

"I worked as a flight instructor for many years, specializing in primary and tailwheel instruction," she notes. "I am one of the few who continued



flight instructing because I loved it. I did this for fifteen years while raising a family."

After her son started college, Adina started down the path to becoming an airline pilot — a lifelong dream. She flew for several 14 CFR part 135 operators at the controls of a Piper PA-31 *Navajo*, Cessna 402 *Businessliner*, and Beechcraft *King Air*. However, the travel and many nights away from home eventually altered her trajectory.

Adina joined the FAA family as an aviation safety inspector in 2017 to pursue a more stable career and lifestyle. Now, she is one of the local FAA Safety Team Program Managers at the FAA Flight Standards District Office in Albany, N.Y.

"This is the perfect position for me — distributing educational material and regulatory updates to the flying public. I enjoy working with general aviation pilots and the aviation industry to promote safety," she explains. "In this position, I am proactive instead of reactive, helping to prevent accidents before they occur."

As a passionate flight instructor, Adina sees one of the industry's most challenging problems is that most use flight instruction as a stepping-stone to build time for higher-paying commercial positions.

"The most experienced pilots should be teaching, but it is often the least experienced pilots teaching," she expands. "There is much more to teaching than just teaching what you know. Some critical skills take time to develop to be a good instructor, which are often missed. One of those skills is the psychology of teaching."

How you teach to everyone's learning style is very important. A good start is understanding the fundamen-



tals of instruction by studying the FAA's *Aviation Instructor's Handbook* ([bit.ly/AvInstructor](http://bit.ly/AvInstructor)). The law of primacy — first impressions are strong impressions — is what Adina equates to one of the most important for any flight instructor to know.

"What a pilot learns first is very likely what they will continue throughout their flying career," she explains. "Flight instructors must teach correctly, be excellent role models, set good examples, and instill good habits. They must be a good example of responsibility and professionalism, dress appropriately, speak appropriately, and set good moral and ethical standards. They must be on time and respectful. They must lead by example because the student will do what the flight instructor does."

One last piece of advice: adjust your teaching style to accommodate each student's way of learning.

"This is part of the challenge that keeps instructing interesting and fun. Change it up, try new ways to get your point across, and enjoy the experience."

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



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