



The Best of *Flight Training Magazine*

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Preflight prep

Five steps to efficient flight training

By: Joel Stoller

Time is money in the world of big business, but in the world of flight training, flight time is big money. Many students come to the airport unprepared for flight training. I can think of occasions when I wasn't as prepared as I would like to have been for any number of reasons, which all students seem to share. Let's take a look at a few tips on how to get ready for each flight lesson-the preparation will save you both time and money.

There are numerous ways to cut the cost of lessons, and they vary with each individual's learning style, so each individual suggestion may not work for everyone. You must experiment a little and adopt the methods that work best for you.

What would you say if I could show you a way to receive a one-hour lesson in a basic training aircraft, including fuel and instructor, for \$23.75? You would say I'm a dreamer and that we'd need to go back in time to 1976 to get an hour of dual instruction at that price. Taking that 1976 figure and then fast-forwarding almost 30 years, the price has nearly quadrupled. That increase merely emphasizes the need to get as much out of one-quarter-hour of airplane instruction as I had to from the price of a full hour.

Also consider that it takes more hours to complete a pilot certificate or rating today than 30 years ago, primarily because today's aircraft, airports, and the ATC environment in general are more complex. Increasing lesson efficiency is a must for all twenty-first-century flight students.

Get the (lesson) plan, Stan

Every pilot certificate or rating for which you train should have a detailed syllabus or course outline. It is broken down into subparts that build your knowledge and skill level into a cohesive whole, culminating in a mastery of the subject-or at least that's the plan. Flight instructors help to construct a future private pilot step by step, and you the student build a pyramid of knowledge block by block; it needs to start with a good foundation.

Knowing how the teacher teaches will help you to lay the groundwork. Each instructor devises a lesson plan or plan of action (guidelines are found in Advisory Circular 60-14: Aviation Instructor's Handbook) for each segment of the syllabus that must be taught, ranging from a simple task such as obtaining a weather briefing to more complicated ones such as flying a cross-country flight. If you, the student, can determine what is in the lesson plan before the lesson starts, you'll understand exactly what you will be responsible for knowing and demonstrating after your instructor demonstrates these items for you.

The instructor lesson plan for the day's tasks usually has seven parts for each topic or flight maneuver.

1. **Lesson objective**-what the instructor expects the student to learn today, for example, power-off stalls and recoveries;
2. **Elements involved**-knowledge and skill necessary to fulfill the lesson objective;
3. **Schedule**-a breakdown of how much time the instructor will spend on each of the elements;

4. **Equipment**-all instructor materials such as a CD-ROM or DVD introduction and review, flight computer, charts, a view-limiting device for instrument work, flight instrument covers to simulate inoperative flight instruments for partial-panel work, and my favorite, the chalkboard with chalk;
5. **Instructor's actions**-proposed ways for presenting the procedures discussed on the ground and then using a combination of discussion/demonstration/performance/critique (by instructor and student in the air);
6. **Student's actions**-simply the student discussing the objective and asking questions, clarifying any misunderstandings, and reiterating to the instructor the elements of each maneuver; and
7. **Completion standards**-these tie into the FAA *Private Pilot Practical Test Standards*, and are the required knowledge and skills to earn the certificate or rating. The tasks and performance parameters in the PTS should always be a target goal for completion of any task, before and after certification. But, if you suspect your instructor is "teaching to the PTS"-that is, teaching you a maneuver without ensuring that you understand the aerodynamic reasons behind it-talk it over with him or her (see "A Failure to Communicate," January *AOPA Flight Training*).

The FAA Examiner's Practical Test Checklist for Airplane Single Engine Land contains about 50 tasks that should be demonstrated with proficiency and skill on the flight test to earn your private pilot certificate. Each of these items should be presented by your instructor in lesson-plan form over the course of your training. Most training programs present a course-training grid, which outlines how the course will advance from "Block One, Lesson One." to completion (essentially a syllabus).

A good way to organize your study and preparation for each lesson is to build your own lesson plan for the next lesson's objective-or FAA task-and use this as a study guide before you meet with your instructor at the airport. You'll save time and money by being prepared for what's to come. Who knows? It may even inspire you to become a certificated flight instructor some day! I have always believed that the true mark of understanding any flight procedure or topic is being able to stand up and teach it. After the instructor's action portion of the lesson is complete, try teaching the maneuver during the student's actions part of the lesson. If you can reasonably accomplish this, your instructor will know that you know the material.

Visualize it

They say a picture is worth a thousand words. How true in the abstract world of visualizing flight maneuvers. Obtain any and all pictorial representations of flight maneuvers available. These compilations-usually in book or electronic (CD-ROM or DVD) format-show how the maneuvers look from inside the cockpit looking out, including instrument displays, and outside the cockpit from what would be the view of an observer on the ground. Creating a mental picture of how a maneuver should look is half the battle in accomplishing the maneuver in the airplane. Words do not suffice, be they written or verbal. If you do not have access to books, CD-ROMs, or DVDs, ask your instructor to use my favorite-chalkboard and chalk-to roughly illustrate how the lesson maneuvers will look when performed.

If you have ever attended a major aerobatics competition, you may have observed the competitors doing a rather peculiar warm-up drill. They will stand near their airplanes and go through all of the motions of their routines using hand gestures (sometimes with arms outstretched), twisting and contorting their bodies in a way that simulates flying the entire aerobatics presentation to be performed in the air. This is a form of "chair flying" that allows these talented pilots to "fly" their routines even before strapping into their aircraft.

Chair flying is one of the oldest and most reliable methods of practice that any pilot can accomplish. All pilots, from beginners to aerobatics champions to airline captains, have realized the value of chair flying to improve their skill level.

For basic training, obtain a poster of the panel of your aircraft (or one that is similar), tack it to the wall in your study, pull up a chair in front of the poster, and break out your pilot's operating handbook or pilot's information manual. (A panel poster isn't a must-have tool, but it's a nice enhancement to this exercise.) Start by going over basic checklist items such as the before-start checklist, saying each step out loud and pointing to the appropriate items on the panel, simulating switch or control manipulation. Go through emergency checklists, such as power-off emergency descents and landings, in the same fashion-focusing on any memory items and then mentally simulating going through the actions step by step.

"Fly" a few maneuvers this way also, starting with takeoff and landing routines, going through the stall and stall recovery procedures, and then more complex maneuvers such as S-turns or turns around a point. Go through a few other scenarios, such as severe weather avoidance, a 180-degree turn and diversion to a suitable airport, or an inadvertent penetration into instrument meteorological conditions. You'll be amazed at how real it feels! And the price is right with a great return on your investment of a little time "flying the chair."

Read all about it

A few other little things you can do to obtain "proficiency for free": Read as much aviation material as you can between lessons or during "down times" (of short or long duration), including periodicals, books (historical, autobiographical, technical, or just fun books with a lot of photos), the pilot's operating handbook for your training aircraft, and any FAA publications, especially handbooks and advisory circulars. AOPA members have access to dozens of FAA publications in the members-only section of AOPA Online.

Go to the airport and park in an approved spot with an aviation frequency radio and listen to pilot/controller ex-changes. You'll be amazed how much you can learn by just listening to the *Aeronautical Information Manual's* Pilot/Controller Glossary live, watching and listening to touch and goes in the pattern.

Make sure that you eat right, get plenty of sleep, and run through the IMSAFE personal checklist before reporting to scheduled lessons ("I'm physically and mentally safe to fly, not being impaired by Illness, Medication, Stress, Alcohol, Fatigue, or Emotion"). Flight training can be physically and emotionally demanding. Make sure you are up to the task each day.

Fly a simulator

Take advantage of any flight simulators available to further increase the realism and your overall proficiency and efficiency in training. Many flight schools have at least one realistic nonmotion simulator with visual presentations that are FAA-approved for flight training and logging of certain instructional time. This is the perfect solution to a bad weather day. Personal computer versions complete with throttle, stick, and rudder are also now readily available for practice at home (although obviously not as economical as the basic "chair flying" set-up

Organize and memorize

When I first upgraded to captain on the DC-9 for my airline, I asked a senior captain about the upgrade process and what I really needed to know to successfully make it through. His response was a half-joking "Just memorize and know everything, and you'll be fine!"

I had already been subscribing to the "review and study one system per month (electrical system, hydraulics, flight controls, etc.)" idea, and that was working well to stay current year round. Now I needed to bring all of that information together in just six weeks for the type rating, an additional aircraft-specific pilot credential needed to fly an aircraft that weighs more than 12,500 pounds or is jet-powered.

I designed a sort of pyramid-shaped study scheme, where the foundation was all of the manuals (about four phone books' worth) and computer disk supplements; the middle contained all of the notes from the manual information; and the top part of the pyramid was a super-condensed version of everything on 3-by-5-inch notecards, great for a final review. At this level, just five words should key a multiparagraph synopsis of, say, the hydraulic system. I created mnemonic words or used acronyms to help me kick off the process, like the piston-engine GUMPS check (gasoline, undercarriage, mixture, prop, seatbelt). This method allowed me to memorize a huge amount of information, which is what you should see at the top of the pyramid, looking down.

Questions and answers about your airplane or the federal aviation regulations written in "flash card" format on 3-by-5-inch notecards can also be very helpful. The notecards should contain a lot of information in compressed form; they can then become the final review for you-the top of the pyramid-after building a study program starting with the bulky manuals on the bottom. No matter what flying certificate or rating you seek, study and memorization are part of the program.

It's vital that you arrive for lessons prepared with the needed information at hand. I will often give students supplemental reading material in the form of informational handouts, asking them to look the material over before the next lesson. I also vividly remember one student who just wouldn't read the material because he "couldn't find any time to read it." We spent a lot of time doing ground instruction to make up for this lost time, and that cost him money.

Try not to be this type of flight student. Come prepared for flight training, just as your instructor does.

Want to know more?

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