William K. Kershner began flying in 1945 at the age of fifteen, washing and propping airplanes to earn flying time. By this method he obtained the private, then the commercial and flight instructor certificates, becoming a flight instructor at nineteen. He spent four years as a naval aviator, most of the time as a pilot in a night fighter squadron, both shore and carrier based. He flew nearly three years as a corporation pilot and for four years worked for Piper Aircraft Corporation, demonstrating airplanes to the military, doing experimental flight-testing, and acting as special assistant to William T. Piper, Sr., president of the company. Bill Kershner held a degree in technical journalism from Iowa State University. While at the university he took courses in aerodynamics, performance, and stability and control. He held the airline transport pilot, commercial, and flight and ground instructor certificates and flew airplanes ranging from 40-hp Cubs to jet fighters. He is the author (and illustrator) of The Student Pilot's Flight Manual, The Instrument Flight Manual, The Advanced Pilot's Flight Manual, The Flight Instructor's Manual, and The Basic Aerobatic Manual. Kershner operated an aerobatics school in Sewanee, Tennessee using a Cessna 152 Aerobat. He received the General Aviation Flight Instructor of the Year Award, 1992, at the state, regional and national levels. The Ninety-Nines awarded him the 1994 Award of Merit. In 1998 he was inducted into the Flight Instructor Hall of Fame, in 2002 was installed in the Tennessee Aviation Hall of Fame, and in 2007 was inducted into the International Aerobatic Club Hall of Fame. William K. Kershner died January 8th, 2007.

Editor William C. Kershner received his early flight training from his father, William K. Kershner. He holds Commercial, Flight Instructor and Airline Transport Pilot certificates and has flown 22 types of airplanes, ranging in size from Cessna 150s to Boeing 777s, in his 10,000+ flight hours. He works as an airline pilot and lives in Sewanee, Tennessee.

To my wife, Betty

and to the flight instructors, pilots, and others in aviation who tried to improve my aeronautical knowledge over the years: Pat Howell, Arch Agee, Horace Draughon, Waldo Rassas, Frank Knapp, Wade Hadley, Buford Ledbetter, Baxter Lehman, Clyde Brown, Piedmont Poindexter, L. M. DeRose, Truman W. Finch, E. B. Salsig, and many others to whom I owe much thanks.

W. K. Kershner

The Flight Instructor's Manual
Fifth Edition
William K. Kershner
Illustrated by the Author

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On Being a Flight Instructor

Background

THE FLIGHT INSTRUCTOR’S CERTIFICATE IS THE MOST IMPORTANT ONE ISSUED. Unfortunately, it is not always viewed that way, but instead it is often thought of as a “license to build up time” for other flying jobs—or other certificates and ratings. If you’re going to be a flight instructor (for whatever reason), be the best while you are doing it.

THE BEST FLIGHT INSTRUCTORS HAVE THE FOLLOWING THINGS IN COMMON:

1. A KNOWLEDGE OF THE SUBJECT. They continually study to update themselves.
2. THE ABILITY TO TEACH. They know how people learn and provide instruction appropriate to the individual and the circumstance. Their instruction is accurate and properly sequenced.
3. A GENUINE INTEREST IN THE LEARNER. They like working with people. The instructor-student relationship is good and they have the confidence of those who are learning. They have consideration of the student’s point of view.
4. PROFESSIONALS IN THE AIR. They have skill and are self-disciplined in the airplane. Their relationship with students is that of friendly authority. (If they are authoritative only, that’s bad; if they are friendly without authority they are ineffective and the student will pay later.)
5. ADAPTABILITY. If the old “proven” methods don’t work with a particular student, professional flight instructors use new techniques, understanding that these new approaches apply only to these individuals.
6. CONSISTENCY. They don’t change personality but use the same standards from one flight to another.
7. UPDATED INSTRUCTING TECHNIQUES. Every once in a while they take a look at themselves to see if they’ve gotten in a rut and change their outlook to rejuvenate their attitudes toward instructing.

Successful instructors’ goals of teaching are to:

a. instill high standards in students;
b. teach precision habits;
c. reduce tolerances as instruction proceeds;
d. detect unsafe habits and correct them (or, more positively, teach safe habits from the beginning).

Your Influence

The flight instructor exerts more influence on flight safety than any other pilot. You may ask, “What about airline captains who fly thousands of passengers every year? Don’t they have more influence than people who may instruct, at most, 30 people in that time?” Remember that those airline captains didn’t spring fully rated into the left seat; much of their attitude toward flying, and their flying habits, are the result of the first few hours of their flight instruction. If they have been flight instructors at some point in their careers, be assured that they passed on some of the ideas they got in their early learning period. This passing of information by flight instructors includes bad ideas as well as good ones, unfortunately.

The student pilot tends to imitate his instructor: If you are the kind of person who thinks that Federal Aviation Regulations are for less-experienced pilots than you, think about the effect on the student if you buzz and show off at low altitudes. You might get away with it, but if a student gets in trouble because he was influenced by your actions, you’d feel low enough to put on a 10-gallon hat and walk under a snake’s belly (and that’s low).

It will bring the idea of your influence directly home when a student of 10 or 15 years ago stops by to say, “I’ll always remember that time we were doing stalls, and you taught me that…” You don’t even remember flying with him, it’s been so long ago, but it has stuck with him. Another time, you may hear about one of your ex-students who, after inadvertently flying into
IFR conditions, saved himself and his passengers by using the emergency instrument flying instruction you hammered so hard at him. Your next reaction, though, after feeling that you've accomplished something, will be to wonder why you weren't able to instill enough judgment so that he would avoid getting into such a situation requiring the emergency training.

Speaking of judgment, throughout this book scenarios will be used to show how to help the student or low time pilot set up his own ideas of aeronautical decision making (ADM) or judgment calls.

You will be an obvious example, and how you act during flight training will affect how the student pilot makes his or her decisions in later years. You, the instructor, may lecture about aviation safety, but unless you fly the way you talk, there will be faint hope of student pilots taking you seriously.

You may later see one of your private or commercial (or instrument, or instructor) trainees getting careless. Will your influence be enough to straighten him out?

It's good to know that people come from miles around to get the word on flying because they know that you are the person who will give it to them straight. Use your influence to make these people fly safely.

**General Responsibilities**

As a flight instructor you will be responsible for:

1. Starting a student, giving him ground and flight instruction so that he may safely solo.
2. Overseeing his solo flights in the local area.
3. Giving periodic dual instruction to add to his knowledge and to check his progress.
4. Giving proper ground and flight instruction to assure him of safely flying the prerequisite amount of solo cross-country for the private certificate.
5. Preparing him to pass the private knowledge test and check ride.

That simple layout of requirements has a certain now aspect as it stands. It boils down to (1) assuring that he is safe to fly solo locally, (2) making sure that he is safe to fly solo cross-country, and (3) seeing that he can pass the private check ride and not embarrass you. What's not listed in the earlier list is implied. You'll make sure that (a) 2 years from now he doesn't neglect to preflight the airplane properly, resulting in problems in flight, (b) 3 years from now he uses judgment and cancels a flight even at great inconvenience because of weather he feels he can't handle, or (c) 4 years after he's left you, he gets several hours of dual because he's hit a slump and knows he needs instruction. **Teach him to recognize his limitations.**

The same thing applies when you are working with a person on the commercial, multiengine, or instrument rating or flight instructor's certificate. You'll actually have three goals to accomplish:

1. Teach the particular item so that he can move on to the next phase.
2. Give him knowledge so that he can continue to complete the requirements to get the particular certificate or rating.
3. Teach him an attitude toward flying that is fixed in his mind long after he's forgotten exactly how to do a specific maneuver for the flight test.

You teach an instrument student basic instrument flying so that he will be ready to go on to radio work and take the practical test. After he takes the practical test, he will have to cope with the weather and ATC systems, so your real objective is for him to be successful in doing that, not just the short range aim to pass the practical test. The practical test is necessary because it covers areas of knowledge needed to cope with the system, but it's poor policy for an instructor to train an individual strictly for a practical test and even worse to train for a particular check pilot. (“This check pilot is heavy on GPS work so we will work on that and won't have to spend much time working on the VOR...” Both the instructor and check pilot are wrong in this case.)

You'll see that your personal responsibility can be heavy. A long distance call from a town to which your student left on a cross-country an hour ago can be quite a jolt until you find out he's okay, except that he had a flat tire when taxiing in there and will be delayed. Or, you'll worry about the student who should have been back 30 minutes ago until (finally) you get his call on the Unicom, or he comes into view over the horizon. You'll be relieved and just a little peeved at him but will give him a chance to explain before starting to discuss his shortcomings.

You'll feel the pressure, too, when you've worked with a person for several weeks or months, recommended him for a particular certificate, and sent him up for the practical test. It can be a very long interval from the time he taxis out with the check pilot until you find out he passed. You can remember all sorts of information that should have been covered in more detail. Of course, his busting a practical test is not a grave event—compared to his having an accident—but you'll sweat the practical test anyway.

Another of your responsibilities to the student is to be truthful if one of your demonstrations goes awry. Most of the times you goof will be obvious (or at least
that wasn’t the way you explained it on the ground), so tell him that was not the way to do it. Then, when you do it slickly and say that is the way, he’ll trust you.

Always be ready to add to your instruction. Many times an unplanned event gives a good opening to add some knowledge of flying. (“Notice how smooth the air got when we climbed out of the haze layer? Well, that’s because…”) Sometimes your throat is sore and you’re hoarse from talking, you’re beat and just want to get back on the ground; but then the airplane ahead of you on final is catching wake turbulence and doing violent maneuvers to get out of it, and you have a graphic way to make a point. So you talk about wake turbulence (and avoid it) while the sight of that airplane is still fresh.

Here’s an example to sum up the personal and moral responsibilities you’ll feel as an instructor:

Some years ago a flight instructor was asked by another, “Do you remember John R., who was your student a couple of years ago and moved away?” The instructor recalled him very well. The other instructor said, “Well, he got killed last week.”

The instructor, who had worked with John R. from the first flight until he had gotten his private certificate, was shaken and tried to think of things he might have done wrong during the flight training. His thoughts were interrupted by the giver of bad tidings. “Yeah, they say that it was one of the worst freeway pileups in L.A. in years. Must have been 40 cars involved, and he was just riding as a passenger.” Needless to say, in addition to feeling bad about John R.’s demise, there was a genuine feeling of relief that he wasn’t killed as the pilot of an airplane.

Concentrate on decision-making skills with all the people you teach. All too often instructors forget that this is the most important skill of all. It’s a nebulous quality, changing from situation to situation, but this book will try to give ideas on how to convince new pilots of its importance. The most important times for decision making will be after the pilot is out on his own and has to make a go/no-go decision without your help.

Contact the student, who may have driven many miles and changed his own schedule to be there at that time.

You know that, if some individuals made the statement that the sun will definitely be coming up tomorrow, you’d rush out and stock up on candles. On the other hand, you’d bank your life on what some other people say. Keep your word.

**Appearance and Other Things**

Let’s face it, some of us are born to look like 5 miles of bad road and that can’t be helped, but the airplane cabin is a small world. Nowadays many of your students will be successful professional men and women, and they won’t put up with a guy in greasy overalls who smells like he’s been cleaning hangars for the past 5 days and nights. Clean slacks and sport shirts or a neat, clean flight suit are fine. A suit and tie may sometimes be carrying it a little too far, but it’s a lot better than the other extreme.

Pilots (and instructors) have been known to take a very small drink of alcoholic beverage on very rare occasions, as anyone who has been to one of their parties will testify. That’s fine, but it goes without saying that meeting a student for flying with beer or whiskey on your breath would hardly inspire confidence. Imagine your reaction if you took up scuba diving and on the first lesson the instructor leaned over, breathed 90-proof fumes in your face, looked at you with bloodshot eyes, and said, “Okay, let’s dive.” Give yourself at least eight hours of sleep between any drink and flying. After the plane is in the hangar, it’s your business what you do—as long as you’ll be completely ready for tomorrow’s flights. Some instructors won’t come to the airport after having a beer even if they aren’t going to fly at all, because if somebody smell’s their breath, the final magnified story will likely be that they were “loaded to the gills and making inverted passes at the hangar.” (All he did was drive back to pick up some charts for tomorrow’s cross-country after having a beer at the airport lounge at the end of the day’s flying.)

**Actions**

Even more important than appearance is your actions. Some instructors think that the louder they yell and the more they shake the student up, the more apt he will be to learn. Instructors could get away with it in olden days in military flight programs, but nobody learning to fly on his own is going to pay today’s prices to be ranted at. A person who uses personal abuse has no business being a flight instructor.

It’s probably most difficult to be patient in a group training program; you’ll have five or six students and
The Flight Instructor’s Manual

Based on the original text by
William K. Kershner
5th Edition | Edited by William C. Kershner

An excellent instructor resource for information about the problems students and pilots encounter in flight training.

The Flight Instructor’s Manual is an invaluable reference for flight instructor applicants and serves as an indispensable guide for both new and experienced instructors (CFIs). Organized so each chapter can be used as a stand-alone reference for a particular phase of instruction, allowing it to serve as a “how to teach” guide on topics including: fundamentals of flight instruction (FOI), presolo instruction, first solo to the private certificate, advanced VFR instruction, introduction to aerobatic instruction, and instrument instruction. The book also features a comprehensive spin syllabus, material on multi-engine airplanes, instructing international students, teaching ground school, and setting up tests.

With over six decades of experience as pilot-in-command in more than 100 types and models of airplanes, Bill Kershner was FAA/General Aviation Flight Instructor of the Year in 1992, and named Elder Statesman of Aviation in 1997. He was inducted into the Flight Instructor Hall of Fame in 1998. His son, William C. Kershner, was soloed by his father, and holds Flight Instructor and Airline Transport Pilot certificates. He has flown 22 types of airplanes in his over 10,000 hours of flight time, ranging from Cessna 150s to Boeing 777s.

With teaching tips on:
• Fundamentals of Instruction (FOI)
• Presolo
• First Solo to the Private Certificate
• Complex Single-Engine Airplanes
• Light Twins
• Spins
• Aerobatics
• Instruments