

Learn to Fly!

Want to add
adventure, challenge
and excitement
to your life?
Become a
general aviation
pilot and experience
the freedom and
opportunity that
comes with flying
an airplane.

Yes, you can be a pilot!

When you see an airplane in the sky, do you imagine what it would be like to be the pilot? You could be. Flying is safe, fun, affordable, and useful. Learning how to fly and earning your wings is an investment in yourself and your future! Unlike many other activities, flying sets you apart. A pilot's license is an accomplishment to be proud of; so when you are a pilot put "FAA Licensed Pilot" on your resume. It tells everyone you can set a goal and reach it. You will be one of the relatively few people who are permitted by the government to take a flying machine into the sky.

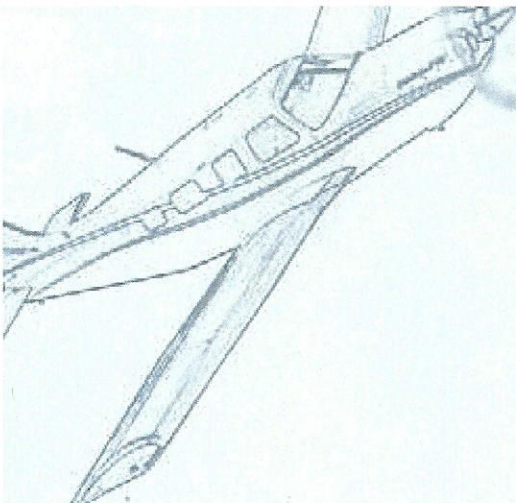
If you think that piloting an airplane is only for those who join the military or want to become commercial airline pilots, think again. Anyone can be a part of general aviation. The term general aviation refers to all aviation activity except the military and airlines. Each year thousands of people in the United States take flying lessons to learn to fly general aviation aircraft.

When most people are asked why they want to learn to fly, they say because flying is fun and exciting. Others learn to fly for personal or business transportation—to fly to a vacation home, visit family, or travel to a meeting or see a client, customer or patient. Flying can take less than half the time the trip would take in a car. You can fly to your destination rather than an airline hub because while the airlines have access to about 560 airports, general aviation can fly to more than 5300 airports in almost every community.

Learning to fly a general aviation airplane also opens the door to a wide variety of employment and career opportunities, both inside and outside of aviation. You may even get that next job you seek because obtaining your pilot license suggests you have the focus, discipline, and determination that employers in many fields are looking for.

Flying an airplane combines the romance and enthusiasm of our heritage with the high-tech equipment and enhanced pilot skills of today. It is a superb tool for business; it is a personal time machine; it is recreation; and it can be a career path. In fact it can be all of these!

If you think you'd enjoy flying and wonder if becoming a pilot is for you, read on. The following pages will start you on a heading to the rewarding, challenging, fun and practical art of flying.



The Basics About Learning to Fly

Can I really become a pilot?

Somewhere someone just like you recently became a pilot. Although the average student pilot is 34 years old, anyone 16 years old or older can learn to fly an airplane (14 to fly gliders). In fact, men and women from every occupation and every geographic location in the nation are pilots.

How difficult is it?

As with any other skill you master, flying is learned step-by-step. It's a fascinating experience that's not particularly difficult. Flying can be learned by practically anyone who is willing to invest the right amount of time and effort.

Pilot training has two aspects: ground training and flight training. Learning the basics of flying while on the ground—either in a classroom or through a home-study course—is typically called "ground school." It covers flight rules and regulations, flight planning, navigation, radio procedures, and weather. There are also a variety of DVDs and videos available to help you understand the material covered in ground school.

In the next phase, flight training, a Certificated Flight Instructor (CFI) will be with you in an airplane and teach you how to fly it. First, you'll learn about the instruments, how to prepare your airplane for a flight and how to taxi. With your flight instructor, you will learn how to take off, land and fly cross-country (from your home airport to another airport and then back again). Your plane will have dual controls so your instructor can always take control if necessary. Millions of people have learned to fly this way.

Do I need special skills to fly?

No. Perhaps the most important element in successfully learning to fly is desire. Once you're ready to invest your time and effort in learning to fly, then it's time to take the first steps toward knowing the freedom that pilots experience as they travel the limitless sky, near the stars, clouds and winds that encircle the earth.

What are the requirements?

There are three basic requirements for learning to fly powered airplanes in the United States. First, you must be at least 16 years old. Second, you have to be in relatively good health. And third, you have to be able to read, speak and understand English.

Age: You can apply for a student pilot certificate (like a learner's permit) if you are at least 16 years old. When you are 17, you can become a licensed pilot. By the way, there is no maximum age limit because it's health and not age that determines a person's ability to fly well.

Health: The Federal Aviation Administration (FAA) requires everyone who wants to become a pilot, except a sport pilot, to pass a routine medical exam every five years—every two years over age 40. This requirement ensures that pilots do not have medical problems that could interfere with their ability to fly safely. Allowances are made for physical limitations such as glasses and contact lenses. With advances in medicine, many treated and controlled conditions, previously disqualifying, are no longer a barrier to a pilot certificate. Examples are certain diabetes and heart ailments. The physical exam can be obtained from one of many FAA-designated local physicians.

Language: In order to obtain your license, you must be able to read, speak, and understand English—the universal language for aviation.

Is flying safe?

General aviation airplanes are built to rigid federal specifications, and they are constantly checked and rechecked to make sure they are mechanically and structurally safe. People who fly are safety-conscious. As the pilot-in-command of an airplane, you're also in command of most variables that affect flying safely.

Safety is the most important word in the general aviation vocabulary. Your flight instructor will focus on the training you will need to operate the airplane safely. Flying as pilot-in-command of the airplane puts you in

charge. A well-built and well-maintained airplane in the hands of a competent, prudent and well-trained pilot makes flying safer than many other forms of transportation.

What happens if the engine quits?

An aircraft engine is a piece of finely built machinery that is designed to run continuously. Engines also have mandated periodic inspections to make sure they are in good condition. In the unlikely event that the engine in the airplane quits, the airplane can descend slowly like a glider. You'll simply do what you practiced during your lessons: select the nearest safe landing site and land there without engine power.

What about insurance?

Life insurance: The insurance companies have learned how extremely safe flying really is. Most new policies don't even mention general aviation flying. If you have an older policy, restrictive clauses for private flying can often be removed at little or no cost.

Liability insurance: Some flight training schools include this insurance along with your cost of using their airplanes. If not, many people purchase special low-cost "renters" insurance. At any rate, you should check with your own insurance agent to find out where you stand and whether there are any additional requirements.



How much does it cost?

Flight training costs vary. Fuel prices, maintenance and insurance costs are but a few of the variables. You can expect to pay between \$6,000 and \$12,000 for a pilot training program, depending upon the certificate you pursue, the time it takes, and where you train. Most schools offer a "pay as you go" program so you do not need to have the full amount of money on hand when you begin. If finances or other factors become a problem, you can always take a pause in training until the situation improves.

Becoming a licensed pilot is a good value, especially compared to other educational endeavors. Prorated over a lifetime, it's probably one of the best bargains you'll ever find. The cost of becoming a pilot is a solid investment in your future. You could spend the same amount of money on a lavish vacation or personal item, but once you've earned your pilot's license, it's good for the rest of your life. It represents a status you have achieved, similar to a college degree or a plumbing, electrical or other trade license you study and train to acquire.

Do I have to own an airplane?

Not at all! Of course, owning your own general aviation airplane will give you complete freedom to set your own schedule. You'll have pride of ownership like nothing you have known before. And, there are hundreds of types of airplanes to choose from: High wing, low wing, long-range, aerobatic and more—depending on your needs and interests.

Some pilots own an airplane in partnership with one or more pilots and share expenses for the airplane. But many pilots don't own their own airplanes. They may belong to a flying club—a group who pools their money to buy and share a plane. Most pilots rent airplanes. Rental fees are normally based on an hourly rate for actual flying time.

How will I benefit from becoming a pilot?

Once you've experienced the joys of flying,

you'll never be quite the same person. You'll have access to a whole new world of personal freedom. You'll think of travel in terms of hours, not miles. You'll know what it means to make your own schedule, go your own way—far above the crowds, the congestion, the hassle and the annoyances of ordinary transportation.

You'll find a new sense of personal fulfillment in your ever-growing flying skills. You'll gain greater self-reliance. You'll push the old boundaries of your life forward and have the opportunity to seek and find new experiences that will enrich your life in countless ways.



Where do I start?

Making the decision to learn to fly is obviously the first step and often the most difficult one. Before you decide, however, you may want to experience flying in a small airplane. Once you've had a bird's-eye-view of your hometown and felt the sensation of flight, you'll know whether flying is for you.

To arrange for a flight, contact a local flight school. Ask about taking an introductory flight. Some schools call this a discovery flight. The flight won't be free, of course, but most flight schools price them at a very reasonable rate in order to introduce more people to the joys of flying.

Where is the best place to learn to fly?

Choosing the right flight school for you depends on your specific needs and reasons for learning to fly. Most flight training programs use a mixture of computer programs, audiovisuals, textbooks and workbooks designed for ground training. You may receive your

ground school instruction from a Certificated Flight Instructor (CFI) or as part of a ground school class.

Your Certificated Flight Instructor—the teacher who will show you how to operate an aircraft—has been specially trained and examined by the FAA to ensure that all of your training is the safest and most effective possible. The flight training itself is conducted one-on-one with just you and your instructor.

Finding the right flight instructor is very important. Because you will work so closely together, you must feel comfortable with his/her personality and teaching style. If you do not "mesh" with your instructor, ask for recommendations from friends and other pilots and try again with someone different.

Many people learn to fly through a local flight school or through a local flying club that offers flight training. Employing an independent flight instructor is also a popular way to learn to fly. Some flight schools are part of a Fixed Base Operator (FBO)—general aviation air terminals much like gas stations for aircraft.

A flying club is a group of individuals who own aircraft and rent them to members. They usually offer flight instruction and other flying-related activities to their members. FBOs, flight schools and flying clubs offering flight training are listed in the yellow pages of the telephone directory and online. Vocational and technical schools, colleges and universities also offer aviation programs that include flight training. If you're seeking a career in aviation, you may want to consider learning to fly at one of these schools while earning a degree in aviation.

What will my first flight be like as a student pilot?

Your instructor will introduce you to the airplane you'll be flying as well as to some basic flight principles. The "preflight briefing" is designed to help you get the most out of the upcoming flight. Before you take your seats in the airplane, you and your instructor will walk around the airplane inspecting specific items to make sure the aircraft is ready for the flight.

Once inside the airplane, you'll be briefed on the instruments, controls and equipment and on what to watch for when you're flying. After this preflight briefing, the two of you will taxi the airplane and then take off. Once you're in the air, your flight instructor will no doubt let you take control of the airplane by yourself. Of course, your instructor will be closely supervising you, but you will finally experience what it's like to fly an airplane by yourself. Soon, you'll feel the exhilaration and be impatient for the next flight!

How long does it take to learn to fly?

Most people receive their private pilot certificate after about 73 hours of flight time, including time spent flying with an instructor ("dual time") and time spent flying alone ("solo time"). Training will include night flying, cross-country flying and even an introduction into instrument flying (flying solely by reference to the airplane's instruments). Fewer requirements and more restrictions apply to the sport and recreational pilots, therefore it will take you somewhat less time to acquire those certificates. Scheduling your flying is up to you and your instructor.

What kinds of tests will I take?

A test is not required for a student pilot certificate. But before a private pilot certificate (license) is issued, you must pass two tests. One is an FAA "written" examination on flying rules and regulations that you'll take on a computer. You'll also have to work out the details of a hypothetical flight. But don't worry; you schedule the timing of this test for when you feel prepared. Besides, you will have done it all before in planning the cross country flights you made as part of your training program.

Following this FAA written exam is a practical examination of your flying ability in the air. This is like the road test you took when you got your driver's license. After some document review and oral questioning, you take a designated FAA examiner for a flight (a "checkride") to demonstrate your ability to maneuver the airplane safely and confidently. You will have practiced the maneuvers many times before, and your flight instructor will have prepared you thoroughly.

What licenses (known as certificates) are required?

As a pilot, you'll be governed by the regulations set by the Federal Aviation Administration. The more responsibility you take on as a pilot, the more stringent the FAA requirements become. For example, pilots who want to fly as commercial pilots for hire must pass stricter requirements than pilots who fly only for personal or business reasons. Here are some of the FAA regulations for the different levels of piloting.

Student Pilot

You must be 16 years old and pass a Class III medical exam given by an FAA-designated physician to obtain a student pilot certificate. The medical certificate doubles as a student pilot certificate. Sport pilot student certificate does not require the medical. You may fly only with an instructor or by yourself with your instructor's written approval.

Sport Pilot

No medical is required, only a US driver's license. You must be at least 17 years old and have logged at least 20 flight hours. You must pass an FAA written exam and flight checkride. As a sport pilot you may fly yourself and one passenger. The training requirements are less than for other certificates primarily because you are limited to flying lighter airplanes known as "Light Sport Aircraft."

Recreational Pilot

You must be at least 17 years old and have logged a total of at least 30 flight hours. You must also pass an FAA written examination and a flight checkride with an FAA designated examiner. As a recreational pilot, you may fly yourself and one passenger. There are some restrictions that limit the recreational pilot compared to the private pilot. This license allows people to fly in their local area without as many training requirements as a private pilot's license.

Private Pilot

You must be 17 years old and have a minimum of 35 to 40 flight hours, depending on the type of school you attend. You must also pass the FAA private pilot written examination (a 60-question, multiple-choice test) and a checkride with an FAA examiner. As a private pilot, you can fly by yourself or with passengers. Special weather requirements pertaining to visibility and cloud conditions must be met, and you must continue to pass your Class III medical exam every five years—two years over age 40. Although you can split flying expenses with your passengers, you may not be paid for your services as a pilot.

Instrument Rating

An instrument rating allows you to fly when visibility is poor and clouds are low. To obtain this rating, you must take instruction from an appropriately certificated instructor, have 40 hours of instrument time and 50 hours of cross country time. Then you must pass an FAA written examination and checkride.

Commercial Pilot

Commercial pilots can "fly for hire." That means you can be paid for flying. You must be at least 18 years old, hold a Class II medical certificate, and have a minimum of 200 hours of flying time. You must also pass a 60-question FAA written examination and checkride.



Multi-Engine Rating

To earn a multi-engine rating, you must take instruction from an appropriately certificated instructor. There is no hourly requirement or an FAA written examination, but there is an FAA checkride, after which you'll be licensed to fly airplanes with two or more engines. You must hold at least a private pilot certificate.

Airline Transport Pilot (ATP)

You must have a commercial certificate with instrument rating, have passed a Class I medical exam within the last six months, have 1,500 flight hours and pass an FAA written examination and checkride. As an ATP, you may perform pilot-in-command duties for commercial airlines and other transport operations.

Certificated Flight Instructor

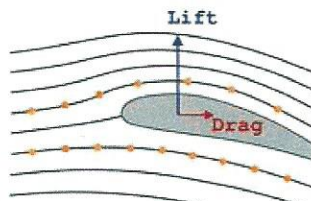
If you want to teach other people to fly, you must become a Certificated Flight Instructor (CFI). You must be 18 years old and hold a commercial or airline transport certificate with an instrument rating. Then you must pass an FAA written examination and checkride. As a CFI, you may instruct private or commercial students. You may also obtain additional instructor ratings to teach as an instrument instructor or multi-engine instructor.

How Does an Airplane Fly?

Airplanes have been around more than 100 years. You may be surprised to know that, even with the amazing advances in aircraft design, the basic principles of flight are the same ones the Wright Brothers harnessed on December 17, 1903. Today's airplanes use these same principles to fly.

The Principle of Lift

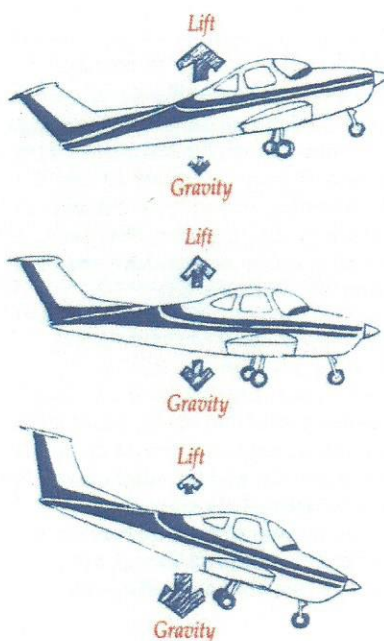
When you examine the cross-section of an airplane's wing, or airfoil, you'll notice that the top part is curved and the bottom part is relatively flat. This special shape creates lift, which makes the airplane fly.



As the wing moves forward, the air flowing over the top travels faster than the air flowing beneath, resulting in a lower pressure area above the wing. The relative pressure differential provides the upward force called lift. Lift is basic to flying.

Lift and Gravity

In order for an airplane to climb, lift must be greater than gravity, the force that holds objects on the earth. For an airplane to maintain level flight at a particular altitude, lift and gravity must be the same, or in equilibrium. When gravity is greater than lift, the airplane will descend.



Thrust and Drag

As an airplane moves forward, the wing produces lift. The force causing forward movement is called thrust, and it's created by the engine-driven propeller or a jet engine. Like the wing, the propeller is also an airfoil. As it rotates, it creates "lift" in a forward direction that is called thrust.

Thrust overcomes drag (resistance of an object toward movement). When thrust is greater than drag, during takeoff for instance, the airplane's speed increases. When thrust and drag are equal, the airplane maintains the same speed. Whenever drag is greater than thrust, the plane slows down.

Lift, gravity, thrust and drag are the four forces acting upon the airplane. You'll learn to understand them thoroughly as you advance in your study of flight.

Control

As the pilot, you control the airplane and you determine how it flies. The different movements of your controls will cause corresponding movements in the airplane.

Here are some basic airplane movements.

Pulling the control wheel toward you raises the elevator on the tail section, which in turn forces the tail down and the nose up. This serves to create more lift than gravity and the airplane will climb. To help produce the extra lift needed in the climb, you usually need additional power from the engine, which you achieve by using the throttle control. Pushing the control wheel away from you lowers the elevator, forcing the tail up and the nose down. This reduces the lift and makes the airplane descend.

The rudder pedals control the movement of the plane from right to left in much the same way as the rudder of a boat. Pushing the right rudder pedal forces the nose of the airplane to the right and the left rudder pedal produces the same movement to the left.

Turning the control wheel enables you to raise or lower either wing, which enables the airplane to turn faster than using only the rudder.

To change the attitude of the airplane (its relationship to the horizon) you simply use the control surfaces and the power of the airplane. It's an exercise in coordination, much like riding a bicycle. Your flight instructor will discuss with you how these simple movements can be combined to maneuver the airplane.

The Parts of an Airplane

An airplane, of course, is more than **a wing, a propeller and an engine**. The body of the airplane, which holds the pilot, passengers and baggage, is called the **fuselage**. The tail of the airplane is called the **empennage**, and it consists of the horizontal and vertical surfaces called **stabilizers**. They create the stability necessary to use the lift and thrust created by the wing and the engine-driven propeller.

Parts of the wing, horizontal stabilizer and vertical stabilizer are moveable to provide the pilot with the means to control the airplane. These control surfaces are called **ailerons** on the wings, **elevators** on the horizontal stabilizer and **rudder** on the vertical stabilizer.

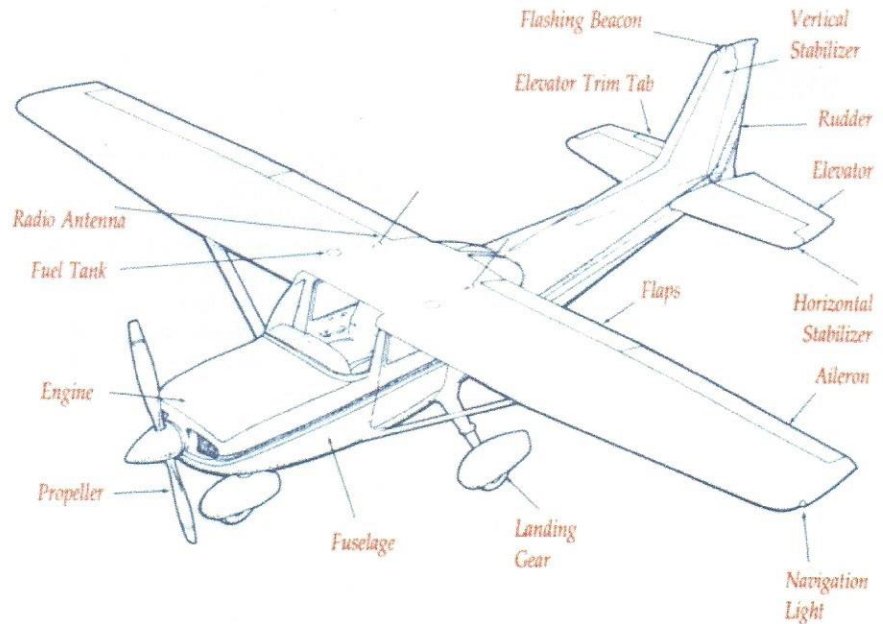
You'll become familiar with the workings of these different parts during flight training.

The Basic Flight Instruments

Although the instrument panel of an airplane may be confusing at first, you'll soon be familiar with the dials and switches and the valuable information they provide. Tremendous advancements have been made in the navigation and communication electronics that pilots use today. Some small airplanes now have instrument panels with flat computer screens that contain the same basic information for use in piloting the airplane.

In recent years, the Global Position System (GPS) has been put to work in smaller general aviation aircraft. With handheld GPS units available at a reasonable price, all pilots can take advantage of satellite-based navigation. Even more advances in communications and navigation for small airplanes are on their way.

New multi-mode digital radios for voice and data communications among pilots, air traffic controllers and ground facilities make flying safer and more enjoyable. Multi-function cockpit displays for weather, moving maps and specific information to pilots in flight also enhance the flying experience.



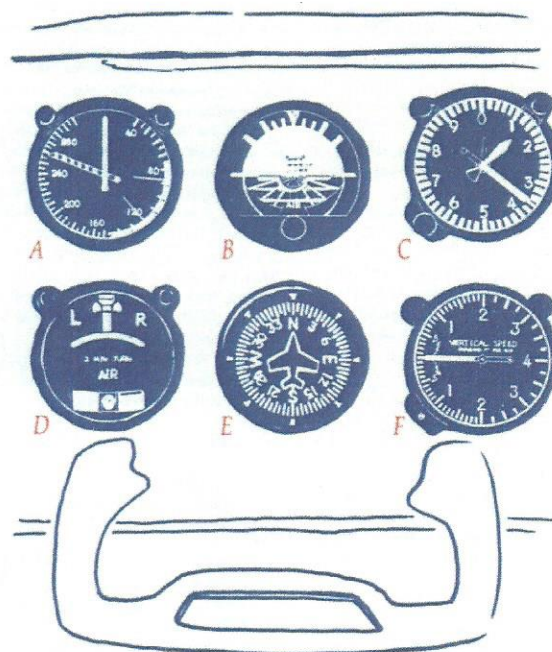
Even with all these advances and those soon to come, however, the basic flight instruments remain the same.

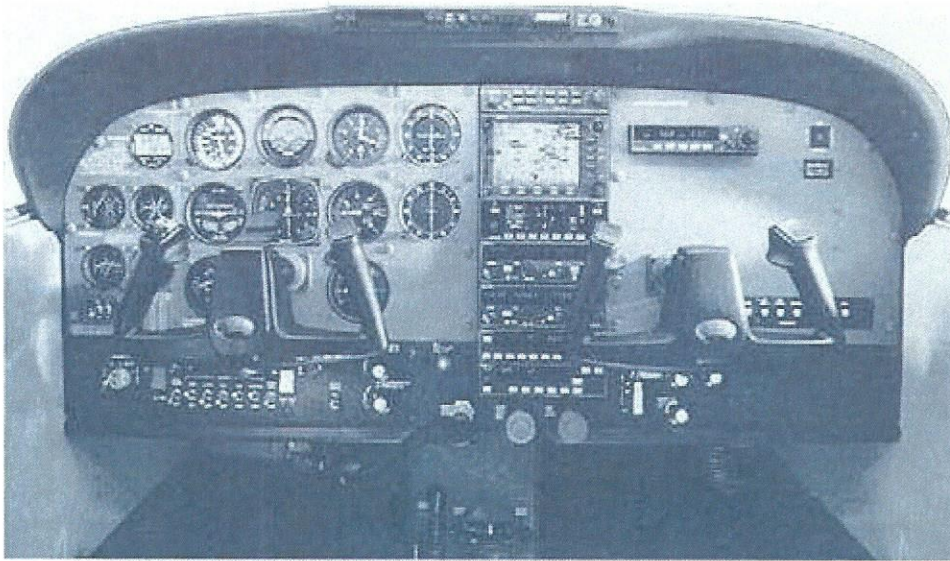
After your first few flights, you'll be thoroughly familiar with these instruments and how they work together with the airplane's control surfaces.



Magnetic compass

Located above the instrument panel, this compass is like the one you've seen in a car or a boat. It tells you the airplane's heading – the direction it's flying. It requires no power source.





A. Airspeed Indicator

Shows the speed of the airplane as it flies through the air.

B. Attitude Indicator

Like the horizon you see looking out from the pilot's seat, it tells you whether the nose of the airplane is pointed above or below the horizon and whether the airplane is turning (banking) to the left or right (left wing down or right wing down).

C. Altimeter

Shows the airplane's altitude in feet above sea level.

D. Turn Coordinator

Shows the rate and the direction of the turn when you're turning the airplane. This allows you to adjust to a slower or faster rate of turn.

E. Heading Indicator

(Directional Gyro)

Shows the direction that the airplane is flying. It's usually bigger and easier to read than the magnetic compass, but it requires some source of power to work.

F. Vertical Speed Indicator

Tells you how quickly you're climbing or descending in feet per minute. When you're in level flight, it reads "0".

What should I do now?

Here are some ideas of things to do now to get started.

- Subscribe to an aviation magazine. Ask other pilots which magazines they recommend, then go to a newsstand, library or the Web and look for aviation magazines. Reading will help build your knowledge about flying safety and techniques as well as familiarize you with different airplanes and avionics.
- Attend an airshow. Almost every weekend of the year, an airshow is taking place somewhere in the country. During the summer months, you probably won't have to travel too far to find a fun aviation event. You'll see daring acrobatic performances, be able to examine aircraft on display and talk to other pilots. Attending an airshow will make you feel part of the aviation world.
- Make friends with other pilots. The best way to do this is to just talk about learning to fly. Pilots love to talk about airplanes and flying. Once you tell your friends and family about learning to fly, you will hear about other pilots in the area—neighbors, co-workers and others. These new friends will be glad to help you understand the concepts as you learn to fly.

- Surf the Internet. The Internet is a fantastic way to get more knowledgeable about airplanes and explore particular aspects of aviation that interest you. There are thousands of aviation-related Web sites, so plunge in and start surfing. You'll find everything from sites expressly for new pilots to ones highlighting famous pilots—even sites with video cams at airports.
- Visit www.beapilot.com or letsgoflying.com. You will find loads of information for new pilots at these web sites.
- Contact a flight school. Choosing a flight school is an important job, so start investigating which school is right for you. The above web sites include a database of flight schools arranged by city and state (or province). You can search for flight schools that are close to you and arrange for a visit and introductory flight.
- Consider earning an aviation degree. If you would like to make aviation a career, contact the University Aviation Association at www.uaa.auburn.edu for a list of colleges and universities that offer aviation degree programs.

Ok, now that you've decided flying is for you, what are you waiting for?

*See you in
the sky!*

