CAREERS IN AVIATION AND AERODYNAMICS

There are a wide variety of careers in aviation, aerodynamics and related positions. We've listed a number for you to look at in the following pages. Some careers that we consider in aerodynamics might surprise you! Take a look at what we have. Your choices of categories include aviation and airplanes: People who design and build 'em; People who test and inspect 'em; People who fly 'em; People who fix 'em; and related careers: People at the airport; People who like things that fly; and People who use airplanes in their work. A job may be listed in more than one section.

Each section begins with a list of careers that require a college degree in a technical field: Mathematics, Science, or Engineering. In addition, we've listed some technical career choices that may not always require a college degree, but that usually require a solid background in math and science or some years of technical training either on the job or through technical schools. We hope you enjoy reading and hearing about these career possibilities!

PEOPLE WHO DESIGN AND BUILD 'EM

Aerodynamicist:

During the design process, the aerodynamicist works hard with the other design engineers to make sure that the airplane, missile, car, boat, or truck moves easily through the air or the water. He or she does this by building a model of the object to be designed and then testing it. One way to do this is to build a scale model and place it in a wind tunnel or a water tunnel. This way the engineer can observe and measure the way the air or water behaves when the object is moving. Click on one of our interviews to hear about some of the projects some NASA aerodynamicists are working on! Another way to test a model is to build it on the computer and use math to predict how the air or water will behave. This kind of aerodynamicist is called a computational fluid simulation specialist, and he or she is discussed in a later section. Most aerodynamics engineers have at least a BS in engineering.

Aircraft Conversion Specialist:

Do you know someone who rebuilds cars and then resells them? An aircraft conversion specialist can do the same thing with airplanes. Maybe the remodeling is just a series of improvements in a regular private plane - better instruments or adding a satellite positioning system. Or maybe he or she will rebuild and redesign an old military or cargo plane into a fancy executive aircraft! Either way, this specialist must have a solid understanding of aviation principles and components, as well as have good sales and customer relations!

Chemist:

Why do airplanes use a different fuel than cars? Why do some rockets use solid fuels, while others use liquid fuels? How do you clean up after you use toxic chemicals? A chemist could tell you the answers to these questions! He or she analyzes the molecular makeup (sometimes atom by atom!) of fuels, plastics, or ceramics for use in aviation. Why not click on our interview to learn more about it? Your average chemist has at least a BS in chemistry, and many often have additional degrees in chemistry.

Computational Fluid Dynamicist:

The CFD (computational fluid dynamics) engineer is an aerodynamicist who specializes in testing a model on a computer. He or she uses math equations and formulas to model the flow of air or water in and around objects such as airplanes, missiles, boats, cars, or submarines. We have interviewed several people who have worked on some really neat problems. A CFD engineer usually has a MS or a Ph.D. in math or engineering.

Design Engineer:

The Boeing 757 and 767 use the same basic design and parts, but the 767 is a much larger plane that can hold up to 120 more people! The design engineer decides how long a plane has to be to hold a certain number of people, how wide it should be, where the wings need to be, and how strong the materials need to be. He or she calculates how the insides of the airplane and wing should be built to carry the predicted loads. Have you ever seen the inside of the fuselage skin or a wing? Click on our interview to meet a design engineer who can tell you all about it! Design engineers usually have at least a BS in mechanical, civil, or aerospace engineering.

Electronics Engineer:

Have you ever wondered how those buttons, dials, and gages in the cockpit work? A lot of us know WHAT they are, but we don't always know how and why they work. An electronics engineer is a person who designs the sensors and connections that tell the pilot of an aircraft that things are fine, or that there is a problem. He or she also designs the connections and devices that translate the motion of the pilot's hand on the stick, for example, into impulses that are sent to the flap mechanism. These impulses are then translated into the motion of the flap. An electronics engineer can have a BS degree or higher in electrical, mechanical, or aerospace engineering.

Equipment Engineer:

Whew! It's hot in here! Lets get an equipment engineer to design an air-conditioning system to cool us off. He or she would have to make it both efficient and inexpensive, as well as size it so that it is neither too big, nor too small for our room! These engineers design heating, pressurizing, hydraulic, and/or oxygen-equipment systems for airplanes, cars, and buildings. Equipment engineers usually have BS degrees in mechanical, electrical, or systems engineering.

Mathematician:

Mathematicians can work in many different areas of aviation, although it's mostly behind the scenes. They develop the math formulas that engineers use to design their work, and help the engineers develop solutions to their problems. For example, a mathematician might work with an aerodynamicist to help formulate the equations to calculate the behavior of the fluid over a body. Or they might help record and analyze the wind tunnel data. Some mathematicians work with chemists or meteorologists to help them with the mathematical equations in their work. Mathematicians study math all through high school and college, and most of them have graduate degrees in math as well.

Metallurgist:

Have you ever had a toy that looked like it was made of strong metals, but when you played with it it broke right away? Well, a metallurgist is a specialist who works with metals and metal alloys to develop and test strong compounds to be used in airplanes and cars. He or she tries to ensure that the parts will not break even after years of use. The metallurgist may work separately in a laboratory in another part of a company, or he or she may be a part of an engineering design team. Either way, he or she tries to make strong parts to last a long time. Metallurgists have a background in hard science, and may have degrees in chemistry, physics, or materials engineering.

Physicist:

The physicist is another behind the scenes part of a design team. He or she may work in many different areas in aviation. A physicist might work by himself or herself, analyzing a scientific problem for aircraft or missiles such as overcoming the heat barrier or computing a trajectory, or he or she might be working closely with a design team. Some physicists work with metals and materials and might interact with chemists or metallurgists, while others are more mathematical and collaborate with aerodynamicists or failure analysis engineers. Most physicists have a solid background in math and science in high school and college, and go on to earn masters or PhD's in physics before going out to work.

Power Plant Engineer:

Hey... Listen to that engine purr, or roar, as the case may be! A power plant engineer may work with piston engines, ramjets, scramjets, turbojets or turboprop engines, or rocket engines! He or she may design the whole engine system, or specialize by concentrating on a single component or part of an engine. Perhaps the engineer might get his or her hands dirty building and testing the engine, or maybe he or she will analyze the engine performance using the computer. Any way you look at it, a power plant engineer has an interesting job! We have one engineer for you to meet:

Structures Engineer:

How does the pilot know that the wing of the plane won't rip off when he or she flies really fast? Or how does a trucker know if a bridge is strong enough to hold his or her truck? A structures engineer designs and tests components and materials to see that they are strong and will last a long time. He or she may do vibration tests (a whole lot of shaking!) or stress and strain tests (bending and twisting and pulling!) to make sure that a suggested design will do the job. The structures engineer is an important member of the design team. Most structures engineers have at least BS degrees in civil, aerospace, or mechanical engineering.

Weight and Balance Engineer:

Most people don't realize that when they and their luggage get on the plane, a weight and balance engineer has already determined where they should sit and where their bags should be placed to make sure that the plane is properly balanced. This may not seem very important to you, but the pilot and the design team think it is. The plane may not fly well or may break if it isn't balanced right! Think about it - have you ever tried to float a boat in water, but you put all the weight on one side of the boat? It probably sank, didn't it? So, the weight and balance engineer studies the loads on a plane or a missile, and he or she works with the other design engineers to ensure that the balance points on the plane or missile coordinate with the controls and structural systems. Then the plane or missile will perform as designed! These engineers usually have BS degrees in civil, mechanical, or aerospace engineering.

This next list of jobs features positions that require less formal education, but still may rely heavily on math and science classes in high school or at technical schools:

Assembler:

The assemblers are featured throughout the production line of an aircraft or missile. They put together various parts of the aircraft, or they monitor the machines that are putting it together. An assembler needs to be good with his or her hands and with tools.

Draftsman/CAD Operator:

Throughout the design and production process, many, many drawings are made to detail the design and building of an aircraft. The draftsman used to sit over a large board and draw the piece of the aircraft to the engineer's specifications, but these days, most drawings are done on a computer using a CAD (computer-aided-design) program. A draftsman (male or female!) must be a good artist, with a strong sense of proportion. Experience with computers is a good plus also.

Electronics Installation Technician:

This technician works with the assemblers, but specializes in electronic equipment. He or she will install the various electronic instruments in the cockpit such as air navigational aids (like radar or the MLS - microwave landing system) and communications equipment, and also do the landing and cruise lights on the outside of the plane.

Jig and Fixture Builder:

The assembly of aircraft and missiles requires very specific frames and cradles, or jigs, to hold the pieces of the aircraft as they are being worked on. Most of the time, these jigs must be made at the production facility; they can't be bought from a catalog. The jig and fixture builder is in charge of creating just the right frame or jig for a part or procedure. These builders are very good mechanics, and often contribute to the design process because of their experience. While they may not be formally trained in engineering, they often have a natural intuition for design.

Model Builder:

When the aerodynamicists need to run a wind tunnel test, they go to a model builder with the specifications of the aircraft and commission him or her to create a scale model. Not only does the model builder have to recreate the aircraft in detail, but he or she also needs to be able to build into the model the necessary instrumentation for the test data. A strong background in math and science helps the model builder to be a full partner in a successful wind tunnel test sequence.

Mock-up Builder:

While the model builder and the aerodynamicists are working on their small-scale tests, it is often important for a design engineer to work with a full-size mock-up of the aircraft. For example, the designer of the cockpit needs to be able to see the full design to ensure that seats are positioned properly, there is head room for all sizes of pilots, and important switches and instruments are easy to see and reach. In an inflight emergency, the pilot doesn't have time to fumble about to find the right switch to throw! So the mock-up builder works with the engineers to develop full-scale models of the design. Again, these builders have a solid background in math and science, along with good mechanical skills.

Sheet-Metal Fabricator:
Many parts of aircraft or missiles are cut or formed from large sheets of metal. The sheet-metal fabricator will work with the metal and the machines that manipulate it to see that the proper parts are created. Good mechanic skills and some computer experience will help someone train as a fabricator.

Technical Illustrator:
Illustrations or drawings of the aircraft parts are very helpful to have in an instruction manual. This manual may be a maintenance manual for up-keep, a how-to manual for an operator like a pilot, or a record of the design process for the design engineers. The technical illustrator helps researchers, engineers, and maintenance personnel by drawing the technical figures necessary to demonstrate a point in the record. Illustrators generally have artistic backgrounds, but the ability to understand basic math and science concepts helps them translate the desires of the technical people to easy-to-follow figures for publication.

Tool Designer:
Highly specialized tools are necessary for the building of aircraft and missiles. They usually can't be bought in stores or from catalogs. So, the production facility foremen must create their own tools. The tool designer may be an engineer, or he or she may be an extremely experienced mechanic who has great insight into exactly the type of tool needed for a job. Nowadays, a lot of the assembly is preformed by computerized machines, so tools must fit into the machine as well as suit the job.

Tool and Diemaker:
Once the tool designer has arrived at a set of specifications, the tool and diemaker must make the requested part. This tool might be machined, or cut down from a raw piece of metal, or it may be cast by pouring hot liquid metal into a mold called a die. A die is the reverse of the tool, and it must be made very carefully so that the finished tool is exactly what was ordered.

Wind Tunnel Technicians:
These technicians work in a wind tunnel facility, operating the tunnels and the data-gathering devices. Since computers are used now for retrieving data, many people are needed to watch the tests to ensure they are running smoothly and that nothing breaks down. Wind tunnels take a lot of energy to run various tests, and the small detailed models can be very expensive. If a test run is stopped because something is broken, something isn't working properly, or a model breaks down, it can be very costly. Technicians may not have engineering degrees, but many have engineering experience. Engineering students often work part-time or full-time as technicians to make money and gain experience while they are still in school.

PEOPLE WHO TEST AND INSPECT 'EM

For these first jobs, you would need a college degree in a technical field such as Mathematics, Science, or Engineering:

Failure Analysis Engineer:
When you read about an airplane crash in the paper, or hear about it in the news, they always talk about the team of experts who are sent out to analyze the wreckage to determine why the plane crashed. The failure analysis engineer is a key member of that team. He or she may be an expert in a specific area, like structures, propulsion, or control systems, or perhaps know a lot about the overall aircraft. In the event of a failure, whether it is a simple system malfunction or a catastrophic failure like a crash, the failure analysis engineer will try to recreate what happened, analyze it, and then recommend changes to avoid the problem again. Failure analysis engineers usually have at least a BS degree in science or engineering.

Flight Operations:
All of the operations of an airport or test facility are managed by the flight operations people. They oversee the flying, training, and maintenance schedules for the pilots and airplanes. When a pilot is scheduled for a check flight, they're the ones who set it up and assign a check pilot to the flight.

Performance Engineer:
Once an airplane is designed and evaluated, a prototype, or full-sized model is built. The performance engineer is one of the team that tests and evaluates the performance of the plane and its systems. If the design team has done its job well, all systems should be A-OK. Sometimes, though, unforeseen problems came crop up, and the performance engineer has to work with the design team to clear up the problem. Performance engineers usually have at least a BS in science or engineering.

Test Engineer:
The test engineer is another member of the team that checks out a new aircraft. He or she works with the performance engineer, conducting studies to determine how well the craft or individual equipment is operating. If the new aircraft or system does not satisfy the original design requirements, it's back to the drawing board! Most test engineers have at least a BS degree in science or engineering.

Weight and Balance Engineer:
Most people don't realize that when they and their luggage get on the plane, a weight and balance engineer has already determined where they should sit and where their bags should be placed to make sure that the plane is properly balanced. This may not seem very important to you, but the pilot and the design team think it is. The plane may not fly well or may break if it isn't balanced right! Think about it - have you ever tried to float a boat in water, but you put all the weight on one side of the boat? It probably sank, didn't it? So, the weight and balance engineer studies the loads on a plane or a missile, and he or she works with the other design engineers to ensure that the balance points on the plane or missile coordinate with the controls and structural systems. Then the plane or missile will perform as designed! These engineers usually have BS degrees in civil, mechanical, or aerospace engineering.

People in these next positions usually have at least one college degree in a technical field, or years of technical experience:

Aircraft Maintenance Inspector:
When something as big and complex as an airplane is being built, and people's lives depend on it working perfectly every time, there are many checks and checkpoints during the building process. A maintenance inspector checks the aircraft parts, systems, instruments, and engines as it

is being built. He or she supervises the work of the mechanics and technicians and evaluates the training methods for these line positions. In addition, the maintenance inspector checks the airline maintenance practices, inventories the spare-parts stock, and complies with safety rules for general aviation. It's a busy job!

Maintenance Technician or Engineer:

These are the people who actually get to work on the airplanes during the test phase. Both technicians and engineers will determine what may be the problem, and what will be the solution. Within a group, individuals may have specialties such as electromechanical, structures, or propulsion, but they all work together. The engineers will all have at least one college degree; the technicians may have a degree or years of experience.

Airways Flight Inspector:

Have you ever been to the airport after dark or when the weather is dark and cloudy? Have you seen all the brightly colored lights that line the runways? These are part of the system that helps pilots land the planes when they can't really see where they are going. In addition to the lights, pilots have instruments called navigational aids to help them pilot the aircraft in for a landing. The airways flight inspector is the person who checks and evaluates these navigational aids such as radio beacons, laser systems, and satellite control systems. He or she may be the actual pilot who flies the plane to test these systems, or he or she may be along for the ride. Either way, before the plane can be cleared for normal use, these systems must be checked.

Crash Site Investigator:

Just like the failure analysis engineer, the crash site investigator is a member of the team of experts sent to the site of an airplane crash. He or she examines the wreckage and evidence at the site to try to determine the cause of the accident. In the military, at least one of these investigators will be another pilot who has extra training in crash site investigation.

Electronics Inspector:

Just like the airways flight inspector, the performance engineer, and the test engineer, the electronics inspector is a member of the testing team for checking the newly built or repaired airplane. In addition to inspecting the electronics equipment on board, he or she, like the maintenance inspector, also oversees the work the electronics technicians do and their training. The electronics inspector also examines the manufacturer and airline's compliance with safety rules for the equipment.

Engineering Flight Test Inspector:

Before the aircraft can be released to the airline that bought it, or to a private pilot, the engineering flight test inspector must check the overall worthiness of the newly built or repaired aircraft for certification. He or she evaluates all the reports of the inspection team members and compares their results with FAA rules and regulations before certify the aircraft for flight.

Flight Safety Research Specialist:

After the crash site inspection team has determined a cause for the crash of an aircraft, the flight safety research specialist studies the reports of the accident, and others like it, to promote safety by recommending improvements to the aircraft design, changes to maintenance or inspection procedures, or new regulations. In addition, flight safety specialists do inspections to ensure that all regulations are being followed.

Manufacturing Inspector:

At the end of the production lines for individual aircraft parts, systems, and instruments, the manufacturing inspectors must check each item for problems and ensure that each one meets the specifications. The inspector may be a trained engineer or a foreman with years of experience.

Test Pilot:

Some pilots (and most of them will be test pilots) will tell you that the very best flying job to be had is as a test pilot! It's certainly rewarding and fun, but it is also risky - very risky. These are the pilots who fly the new planes or the experimental planes to check their performance and handling. They must push the airplane to its maximum levels to test it fully. If the engineers and designers have made a mistake on something, it could be dicey for the pilot! Test pilots must be excellent pilots with a lot of solid flying knowledge. A lot of test pilots come from the military.

PEOPLE WHO FLY 'EM

Air Cargo Pilot:

This pilot transports airfreight from one airport to another.

Airline Captain:

This pilot is responsible for the safety of the passengers and cargo. He or she makes flight plans with the dispatcher and meteorologist, makes preflight checks of the aircraft, operates the controls, and supervises the crew.

Check pilot:

This pilot observes other pilots' proficiency on check flights and trains new pilots.

Co-pilot:

The co-pilot assists the pilot in the operation of the flight controls, watches the instruments and weather, handles radio communications, and keeps logs.

Corporate Pilot:

The corporate pilot flies aircraft owned by business or industrial firms transporting company executives on flight to branch plants or business meetings.

Flight Engineer:

The flight engineer monitors the in- flight operation of the engines and aircraft's mechanical and electrical systems.

Flight Instructor:

This pilot teaches student pilots how to fly. They demonstrate and explain, on the ground and in the air, basic principles of flight, aerial navigation, weather factors, and Federal Aviation Regulations.

Helicopter Pilot:

These pilots can make flights to otherwise inaccessible areas.

Pipeline Patrol Pilot:

This pilot inspects oil pipelines from low-flying planes.

Navigator:
The navigator plots the course, reports positions, and estimates arrival time.

These positions may not require a college degree:

Aerial Sight-seeing Pilot/Guide:
This person conducts sight-seeing tours in aircraft.
Air Taxi Pilot:
This pilot provides air taxi service for the public.
Crop Duster:
This pilot is responsible for spraying, dusting, fertilizing, or seeding crops or orchards.
Flight Attendant:
He or she checks passengers' names and destinations, enforces safety rules, serves food, oversees passengers' comfort, and directs evacuation procedures in the case of an emergency. A high school diploma is required but applicants with several years of college or experience in dealing with the public are preferred.
Flight Simulator Instructor:
This person trains pilots and checks their skills, using a flight simulator. Usually has pilot experience.
Loadmaster:
He or she supervises proper tie-down procedures of cargo and calculates weight distribution of the load.
Skywriter/Sign Dragger:
This person pilots skywriting aircraft releasing chemicals to create words in the sky or drags an advertising banner behind their aircraft.
Stunt Pilot:
Stunt pilots perform aerobatic maneuvers usually for the entertainment of observers on the ground.
Traffic Control Pilot:
Pilots the planes that fly around the cities so that reporters can monitor the traffic and report trouble spots to the TV and radio stations.

PEOPLE WHO FIX 'EM

These positions generally don't require a college degree, but their bosses and managers are often engineers. They do require technical training received either on the job or from technical schools. A solid background in math and science will help a person advance in one of these careers.

Flight Line Mechanic:
The airplane is prepared for test flight after final assembly by the flight line mechanic.
Missile Mechanic:
The guided missile mechanic installs, maintains, tests, and repairs guided missile control systems.
Aircraft Mechanic:
The aircraft mechanic's job is to service aircraft airframes and engines.
Electromechanic:
The electromechanic maintains teletype equipment, landing lights, beacons, and stand-by generators.
Aircraft Instrument Technician:
He or she installs, repairs, and tests aircraft instruments.
Avionics and Aircraft Radio Technician:
This technician installs and repairs radio equipment.
Propeller Specialist:
The propeller specialist repairs and checks propellers and governors.
Parachute Packer:
It is this person's job to pack personnel, cargo, and aircraft parachutes involving military flights.
Electronics Maintenance Technician:
This person maintains navigational aids and communication equipment, such as radar and radio beacons.

PEOPLE AT THE AIRPORT

These first jobs usually require a college degree:

Airport Designer:
It is this person's job to plan and design airport facilities.
Air Traffic Controller:
While manning the airport control tower, the air traffic controller directs all flight activities, give advise and information by radio to pilots, and monitors planes in and around the airport.

Airways Engineer:
The airways engineer plans electronic navigational aids, such as radar, instrument landing systems, and airport approach lighting.

Fixed Base Operator:
This is a retail firm that manages services (aircraft refueling, airframe, engine, and/or instrument repair, flight training, ground school, rentals and charter flights) and sells general aviation products at an airport. The requirements to become an FBO are not clearly defined. A pilot's license is not essential but would be useful as would training in business administration.

Flight Dispatcher:
The flight dispatcher works the with the pilot planning flight requirements (fuel consumption, altitudes, traffic flow, weather, winds aloft) authorizes take-offs or cancels flights, and advises pilots in the air on weather or route changes. They frequently work under pressure in a noisy, busy atmosphere surrounded by other airport workers, teletype machines, telephones, and intercom systems. They use computers, calculators, weather charts, and loading reports, sometimes also doing the job of a meteorologist or schedule coordinator. Experience as a flight dispatcher could lead to promotions to air traffic controller or airport manager. The job requires a college degree with a major in air transportation or meteorology.

Meteorologist:
He or she analyzes weather data and makes weather reports to the pilot and dispatcher and then works with the flight dispatcher preparing flight plans. A college degree with a major in meteorology is required for the job.

These positions generally don't require a college degree:

Air Cargo Agent:
It is this person's job to supervise the cargo terminal, record air freight shipments, and arrange for deliveries. A high school graduate with experience in shipping is preferred for the job. Physical strength is required.

Air Cargo Forwarder:
It is his/her job to deliver airfreight to and from airlines.

Airline Station Manager:
The station manager is in charge of all ground and flight operations for his/her airline. These responsibilities could include aircraft handling, passenger services, air cargo operations, ticket sales, making public announcements, checking baggage, or operating computer terminals depending upon the size of the airline or airport. This position requires a high school diploma.

Ground Radio Operator:
This person operates airline station radio equipment.

Operations Agent:
The operations agent oversees the loading and unloading of the airplane and checks the distribution of the aircraft load and fuel.

Baggage/ Air Cargo Handler:
He or she loads and unloads cargo and baggage, drives baggage tractors, and operates conveyors, forklifts, and other air freight handling equipment. A high school diploma is normally required and the minimum age is usually 18 to 20 depending upon the airline.

Security:
The security person is responsible for the safety of all people in and around the airport. He or she is authorized to x-ray carry-ons, search baggage, enforce airport regulations, and patrol the grounds.

Food Service:
Food service employees prepare food for airline travelers and are also responsible for cleanup of dishes and utensils. High school graduation is desired and health certificates are required.

Reservations Clerk:
This clerk handles telephone inquiries about flight schedules and fares and makes flight reservations for airline passengers. They usually work in large central offices with access to telephones and computer terminals. Applicants must have graduated from high school and be at least 18 years of age. Airlines prefer those with training in airline operations or experience in public telephone contact work.

Ticket Agent:
The ticket agent sells tickets, weighs and tags baggage, and answers questions on schedules and fares. The minimum age varies from 18 to 20 depending upon the airline. Graduation from high school is a minimum requirement, however, two years of college is preferred.

Travel Agent:
The travel agent promotes airline travel, calls on customers, and arranges charter flights.

PEOPLE WHO LIKE THINGS THAT FLY

Some of our choices in this section may surprise you. These positions aren't necessarily engineering positions, yet the people in them may know a lot about aerodynamics and flying! The first group of careers generally require a college degree, and the second group may not.

Education and Learning Technologies:
This job calls for one to assist schools, teachers, and youth groups to increase knowledge of aviation. Usually this person has a degree in a technical field.

Aviation Historian:

Aviation Museum Curator:

Aviation Writer:

This writer reports on new developments in aviation and space exploration for newspapers, magazines, and books. This person usually has a journalism degree, with perhaps some technical training as well.

Bird Expert (Ornithologist):

Flying Mammals Expert:

Insect Expert:

Paleoaerodynamicist:

State Aeronautics Director:

He or she promotes aviation within his/her state, administers state regulations, and aids communities in building airports. Will often have a technical degree and/or a pilot's license.

These positions may not require a college degree:

Aircraft Salesperson:

He or she demonstrates light planes to customers and sells aircraft parts and accessories.

Beekeeper:

Civil Air Patrol:

ROTC Instructor/Recruiter:

Sky Diver:

Stunt Pilot:

Stunt pilots perform aerobatic maneuvers usually for the entertainment of observers on the ground.

PEOPLE WHO USE AIRPLANES IN THEIR WORK

Aerial Fire Fighters:

He or she observes forest fires from the air, directs fire fighters on ground by radio, and dumps water or chemicals on fires.

Aerial Photographer:

This person takes photographs events, landscapes, or scenery from the air.

Aerial Prospector:

He or she uses airborne electronic instruments to locate and map mineral deposit areas.

Aerial Sight-seeing Pilot/Guide:

This person conducts sight-seeing tours in aircraft.

Air Taxi Pilot:

This pilot provides air taxi service for the public.

Crop Duster:

This pilot is responsible for spraying, dusting, fertilizing, or seeding crops or orchards.

Flight Doctor/Nurse:

This person attends to sick or injured military personnel in flight.

Search and Rescue:

Skywriter/Banner puller:

This person pilots skywriting aircraft releasing chemicals to create words in the sky or drags an advertising banner behind their aircraft.

AVIATION SALARIES

Career / Industry Group	Minimum Salary	Average Salary	Maximum Salary
Airport	$17,467.00	**$63,553.28**	$190,000.00
AP Mechanic	$14,137.20	**$53,920.62**	$78,000.00
Avionics	$20,000.00	**$78,540.88**	$160,000.00
Cargo	$27,000.00	**$27,000.00**	$27,000.00
Computer	$49,938.00	**$56,093.00**	$62,248.00
Dispatch	$23,688.00	**$32,312.57**	$55,000.00
Engineering and Aerospace	$20,000.00	**$71,640.26**	$115,000.00
Executive	$65,000.00	**$65,000.00**	$65,000.00
Flight Attendant	$18,000.00	**$20,750.00**	$24,000.00
Ground-Ramp	$32,000.00	**$41,047.00**	$57,869.00
Helicopter	$35,000.00	**$51,700.00**	$72,000.00
Management	$16,476.00	**$58,190.75**	$120,000.00
Office and Administrative	$14,137.20	**$40,339.24**	$65,000.00
Other	$20,000.00	**$56,452.76**	$123,456.00
Pilot	$14,137.10	**$58,247.12**	$120,000.00
Sales-Marketing	$25,833.00	**$79,050.92**	$500,000.00

Sources:
The National Business Aviation Association: http://www.fi.edu/wright/again/wings.avkids.com/wings.avkids.com/Careers/index.html
Avjobs.com: http://www.avjobs.com/careers/index.asp