

# AVIATION CAREERS SERIES

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## *YOUR CAREER IN AVIATION: THE SKY'S THE LIMIT*



U.S. Department of Transportation  
**Federal Aviation Administration**

Office of Public Affairs  
Aviation Education Program

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U.S. Department  
of Transportation

**Federal Aviation  
Administration**

## INTRODUCTION

Aviation has progressed a long way since the 120-foot flight by Orville Wright on December 17, 1903, at Kitty Hawk, North Carolina, and since the first U.S. airline began operating between Tampa and St. Petersburg, Florida, on January 1, 1914. Today supersonic aircraft fly routinely across the oceans, and more than two million people are employed in aviation, the aerospace and air transportation industries.

In response to its Congressional mandate, the Federal Aviation Administration, as part of its effort to plan for the future of air transportation, conducts an Aviation Education Program to inform students, teachers, and the public about the Nation's air transportation system.

Aviation offers many varied opportunities for exciting and rewarding careers. The purpose of this brochure, and others in the FAA Aviation Careers Series, is to provide information that will be useful in making career decisions. Publications in this series include:

1. *Pilots & Flight Engineers*
2. *Flight Attendants*
3. *Airline Non-Flying Careers*
4. *Aircraft Manufacturing*
5. *Aviation Maintenance and Avionics*
6. *Airport Careers*
7. *Government Careers*

There is also a brochure entitled "*Women in Aviation.*"

Free brochures may be obtained by sending a self-addressed mailing label with your request to: Superintendent of Documents, Retail Distribution Division, Consigned Branch, 8610 Cherry Lane, Laurel, MD 20707.

## ACKNOWLEDGEMENT

The FAA wishes to thank Keith Connes, and Barbara de Boinville for their contributions to this publication.



# **FAA**

## **AVIATION EDUCATION PROGRAM**

The Federal Aviation Administration (FAA) has a rich history of dedication and commitment to aviation education. The Congress has recognized this historic leadership role by requiring a civil aviation information distribution program within each FAA region to support the agency's aviation education program.

Aviation education is an integral element of the agency's mission and is essential to carrying out its responsibilities of promoting aviation and flight safety.

The agency is dedicated to the development and implementation of aviation education programs which provide general education for all citizens and information on aviation careers for America's young people with a special emphasis on women and minority youth.

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# YOUR CAREER IN AVIATION: THE SKY'S THE LIMIT

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## YOUR CAREER IN AVIATION: THE SKY'S THE LIMIT

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For someone who is looking for a career that offers a tradition of service, growth, and excitement, the world of aviation beckons.

It's a big world, and one that is made up of a wide variety of job opportunities. Some require a considerable amount of training, while others are available at the entry level.

Depending on the kind of working environment you prefer, you may find yourself aloft in the cockpit or cabin of a plane or on solid ground in an office, on a production line, or on an airport ramp.

This brochure will provide you with an overview of the job categories mentioned on the opening page.

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## PILOTS AND FLIGHT ENGINEERS

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**Pilots.** For many professional pilots, the ultimate job is to be an airline captain. The pay can be very good; top salary at some of the higher paying major airlines is around \$160,000 a year, for about 80 to 85 hours of flying per month. And benefits for pilots, as well as many other airline employees, include travel passes. But remember, the top salary level is reached only after many years of service and only at a few of the major airlines. Most airline pilots start out as first officer (co-pilot) with a regional carrier; initially they earn about \$12,000 to 18,000 a year. And when they join a major airline, their first position may not be as a pilot, but as a flight engineer. Considerable training is necessary for any type of pilot job, and most airline pilots have to "pay their dues" by first gaining a good deal of experience either in the military or in other types of civilian piloting. In addition to airline pilot, pilot jobs include flight instructor, corporate pilot, charter pilot, test pilot, and agricultural pilot. Many people enjoy these kinds of flying—each with its own set of challenges and rewards—and wouldn't think of trading their jobs for that of airline pilot.

**Flight Engineers.** The position of flight engineer, or second officer, exists only on some of the large jet planes. Smaller airliners—as well as the newest large aircraft—have only a two-person flight crew, consisting of the first officer and captain. Functions of the flight

engineer include inspecting the aircraft and overseeing fueling operations before flight. During the flight, the flight engineer monitors the performance of the engines and cabin pressurization, air conditioning, and other systems. Some flight engineers are not pilots and remain in their position for their entire careers, while others become flight engineers strictly as a stepping stone to a "front row seat" as airline pilot.

For more information on these career opportunities, request the Aviation Careers Series brochure entitled "Pilots and Flight Engineers."

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## FLIGHT ATTENDANTS

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While the flight crew in the cockpit is responsible for getting the passengers to their destination safely and comfortably, the flight attendants are in charge of the cabin, and they, too, are responsible for the safety and comfort of the passengers.

The flight attendant's normal routine is to see that the passengers are seated properly and to serve refreshments or meals during the flight. However, the attendants are highly skilled in handling emergencies if they should arise, and over the years many of them have honored their profession with heroic service.

Flight assignments usually require overnight stays in cities away from home base. Flight attendants are given hotel accommodations and travel allowances for meal expenses and transportation.

In addition to performing flight duties, flight attendants sometimes make public relations appearances for the airlines during "career days" at high schools, at fund raising campaigns, sales meetings, conventions, and other goodwill occasions.

As for advancement, they can become senior flight attendants or flight attendant supervisors, directing other flight attendants on the flight. Also they may work into positions as flight attendant instructors, or other attractive jobs in the company.

For more information on these career opportunities, request the Aviation Careers Series brochure entitled "Flight Attendants."



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## AIRLINE NON-FLYING CAREERS

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Even though the airlines are in business to transport people from one place to another, they could not function without the help of many people on the ground, including those who take reservations and sell tickets, as well as those who help keep the airplanes operating on schedule.

In general, most airline jobs require a high school diploma. All workers, regardless of their jobs, are given some degree of on-the-job training. Some private technical schools offer courses in airline operations (such as reservations, ticketing, teletypist and flight attendant training). This training may give an applicant an advantage, but remember that each airline has its own training procedures. Therefore, you should check with the airline to which you are applying to find out what pre-employment training it requires.

Briefly described below are many of the jobs that must be filled to keep the planes flying.

**Instructor.** The airlines' excellent safety record is largely because of the first-rate training they provide. To keep up the proficiency of flight crews and ground personnel who have direct contact with the airplanes, powerplants, and flight techniques, the airlines employ several thousand people. Typical training jobs are ground school instructor, flight attendant instructor, and flight simulator/duplicator operator. The instructors direct the pre-service and in-service training programs of the airline. Educators are also employed as curriculum/program developers.

**Engineer.** In line with their particular engineering specialty, engineers work closely with aircraft manufacturers to develop new models of airliners. They make sure the requirements of the airline are met concerning performance, aircraft accessories, cabin plan, interior decorations, and extra equipment. They also design improvements to aircraft and to methods of servicing and overhauling them.

**Flight Dispatcher.** In cooperation with the pilot, the flight dispatcher furnishes a flight plan that enables the aircraft to arrive at its destination on schedule with the maximum payload (that is, passengers, mail, cargo) and the least operating cost. The flight dispatcher considers enroute and destination weather, winds aloft, alternate destinations, fuel required, altitudes, and traffic flow. He or she maintains a constant watch on all flights dis-

patched and is the liaison between the pilot and ground service personnel. The flight dispatcher must be familiar with all airline routes and airport facilities as well as with the takeoff, cruising, and landing characteristics of all types of aircraft operated by the airline. Flight dispatchers also take periodic flights in the cockpit with the flight crew to observe flight routes, conditions, and airports.

**Meteorologist.** The meteorologist analyzes weather data and prepares weather reports for the flight dispatcher, pilots, and other airline personnel concerned with weather information. He or she assists the flight dispatcher in preparing flight plans.

**Schedule Coordinator.** The schedule coordinator keeps track of the whereabouts of aircraft and crews; receives and relays reports of delays due to weather and mechanical problems; estimates times of arrival; and gives orders for substitution of aircraft when required. The schedule coordinator may be involved in the diversion of flights to alternate airports, and with seating arrangements of planes.

**Station Manager or Agent.** Sometimes known as the district operations manager, the station manager or agent is responsible for all flight and ground operations, such as aircraft handling, passenger services, and air cargo operations. At a small station, the manager may sell tickets, make public announcements, check in baggage, move portable boarding stairs, prepare passenger and air cargo manifests, operate teletype machines and computer terminals, and perform other needed services.

**Reservations Sales Agent.** The reservations sales agent handles telephone inquiries about flight schedules, fares, and connecting flights, and he or she reserves seats and cargo space for customers. The reservations sales agent must be able to operate computerized reservations equipment, keep records of reservations, and recommend services that fit customers' requirements.

**Ticket Agent.** The ticket agent answers inquiries about flight schedules and fares, verifies reservations by phone, figures fares, writes tickets, and handles payments. Agents who work at an air terminal ticket counter may check in passengers' baggage.

**Ground Attendant.** High public visibility characterizes this job. The ground attendant assists passengers in the terminal in many different ways. For example, the ground attendant answers questions about fares, helps locate lost baggage, explains missed connections, and



provides assistance to persons who are ill or in need of a wheelchair.

**Teletypist.** The teletypist operates teletype machines that send, receive, and distribute messages. He or she works in the airline's operations office or in other offices where teletype equipment is used.

**Skycap.** The skycap helps passengers with baggage and answers questions about departures, arrivals, and terminal facilities. Skycaps assist passengers to and from taxis, buses, and cars, and sometimes they check in baggage at the terminal entrance.

**Air Freight Agent.** Air freight agents receive air freight shipments, supervise loading and unloading, and keep written records. They handle contacts with air freight forwarders and customers, and they use telephones, computers, and hand calculators to do their jobs.

**Passenger Service Agent.** The passenger service agent responds to passengers needing special assistance because of over-sold flights or missed connections, for example. He or she may help with the boarding or deplaning of passengers and also may perform the duties of ticket agent.

**Sales Representative.** The sales representative, sometimes referred to as an account executive, calls on prospective customers to explain the advantages of airline service for travel and shipment of cargo. He or she keeps in touch with travel agencies, firms, and educational institutions that may need airline services, and with other airlines to increase interline sales. Hotel reservations for customers are sometimes made by sales representatives. A knowledge of flight and fare schedules is essential.

**District Sales Manager.** The district sales manager is in charge of the city ticket and reservations sales offices in the area. To promote air traffic and sales of airline seats and cargo space, the sales manager maintains contacts with many prospective customers and directs the activities of sales personnel.

**Ramp Service Personnel.** There are various types of ramp personnel. *The cabin serviceperson* cleans the airplane and cockpit between flights. Particular duties include vacuuming the floor, picking up trash, washing lavatories and buffets, replacing headrests and pillow covers, folding blankets, refilling seat packets with magazines and safety information, refilling the drinking

water supply, and cleaning the cockpit windows. Other servicepersons are responsible for the exterior of the aircraft. They wash, polish, touch up paint, and de-ice the outside of the airplane. They also work with chemicals that are used to prevent corrosion of surfaces.

*The baggage and air cargo handler* loads and unloads baggage, air mail, air express, and air cargo shipments. He or she operates baggage tugs, conveyors, fork lifts, and other baggage and air freight handling equipment.

*The aircraft fueler* operates the fueling equipment. This employee may fill a fuel truck and deliver the fuel to aircraft.

Other ramp personnel drive food trucks, mobile stairs, employees' buses, messenger cars, and conveyors. They also may transport cleaning equipment, aircraft air conditioning, and power carts.

**Ramp Planner.** The ramp planner keeps track of arriving aircraft and dispatches service units, cleaners, fuelers, baggage handlers, and food service trucks. He or she must know flight schedules.

**Cabin Maintenance Mechanic.** The cabin maintenance mechanic cleans and paints interiors of aircraft during periodic major overhauls; removes and installs carpets, seats, curtains, and bulkheads; and reupholsters seats. He or she also overhauls and cleans electrical equipment in cabins, such as lights, buffets, and coffee-makers.

**Food Service Employee.** The food service employees follow set recipes to prepare and cook food. They arrange silverware and dishes on serving trays and food items in serving dishes. They place food in either hot or refrigerated containers for pickup and delivery to the aircraft. They receive and clean soiled dishes.

**Auto Mechanic.** The auto mechanic services and repairs ground service equipment, such as portable stairs, fuel and food trucks, towing tractors, and employee buses.

**Administrative personnel.** In addition to the previously described jobs, airlines employ thousands of receptionists, typists, secretaries, stenographers, mail and file clerks, and computer personnel, as well as people in managerial positions such as training, public relations, publications, finance, personnel, and other kinds of work associated with business and industry. Salaries are



generally above the average paid by industry and business.

**Professional Personnel.** Professional job opportunities within the airlines today break down into the following categories: architects, aeronautical research scientists, engineers, drafters, doctors, nurses, lawyers, and instructors. Intensive education and specialized training are required to perform many of these jobs. The personal qualifications are the same as those required of similar professionals in other fields. The salaries of airline professionals are among the highest paid to airline employees.

For more information on these career opportunities, request the Aviation Careers Series brochure entitled "Airline Non-Flying Careers."

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## AIRCRAFT MANUFACTURING

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Take a look at the aircraft manufacturing industry and you'll see a picture of ups and downs. At this writing, there are more orders for some of the new U.S.-built airliners than the manufacturers can fill. At the other end of the spectrum, the light aircraft—small piston-engine planes flown by pleasure and business pilots—are not selling as well as they have in the past, although a few manufacturers are keeping busy. In the middle of the scene, there is a steady but highly competitive market for corporate jets.

The major divisions within the aircraft manufacturing industry are airframe, components, accessory and equipment, and engine. The industry employs scientists, engineers, technicians, production workers, and administrative and support activities personnel.

**Scientists.** Scientists in the aircraft manufacturing industry can specialize in many fields: aerodynamics, physics, mathematics, chemistry, physiology, metallurgy, meteorology, cryogenics (the study of physics that pertains to the production and effects of very low temperatures) and avionics (or aviation electronics). The uses of composites and ceramics comprise a relatively new field of scientific inquiry.

**Engineers.** Engineering fields include design, aerodynamics, avionics, instrumentation, manufacturing materials, weights and balance, field service, and flight testing. More than half of the industry's scientists and engineers are in research and development work. The remainder are in production planning, quality control,

tool designing, technical purchasing, technical sales and service, technical writing and illustrating, and related fields.

**Technicians.** Technicians include all persons engaged in work requiring knowledge of physical, life, engineering, and mathematical sciences. Technicians can specialize in any of the fields of study mentioned above for scientists and engineers. This job category also includes drafters and technical writers and illustrators.

**Aerospace Workers.** Aerospace workers engage in sheet metal and other metal work, composite fabrication, machinery and tool fabrication, assembly and installation, inspecting and testing (quality control), flight checkout, materials handling, and maintenance and protective custodial jobs.

For more information on these career opportunities, request the Aviation Careers Series brochure entitled "Aircraft Manufacturing."

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## AVIATION MAINTENANCE AND AVIONICS

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Aviation maintenance mechanics (including airframe and powerplant technicians, avionics technicians, and instrument repair personnel) have the important responsibility of keeping airplanes and their equipment working safely and efficiently. They service, repair, and overhaul various aircraft components and systems including airframes, engines, electrical and hydraulic systems, propellers, avionics equipment, and aircraft instruments. In recent years their work has changed greatly because of advances in computer technology, solid state electronics, and composite structural material.

Aircraft mechanics employed by the airlines perform either line maintenance work (for example, routine maintenance, servicing, or emergency repairs at airline terminals) or major repairs and periodic inspections at an airline's overhaul base.

Aircraft mechanics in general aviation perform maintenance and repair jobs similar to those performed by airline mechanics, but they may work on small piston-engine or larger turbine-powered aircraft, depending on the type of business the facility specializes in.

An aircraft mechanic may be licensed or unlicensed. The licensed mechanic may receive from the Federal Aviation Administration (FAA) a Mechanic Certificate (with



an airframe rating, powerplant rating, or rating for both) or a Repairman Certificate. FAA Mechanic Certificates are issued upon successful completion of oral, written, and practical examinations. A mechanic with an airframe, powerplant or airframe and powerplant (A&P) rating can work only on the specific parts of the aircraft for which he or she is rated. Similarly, a mechanic with an FAA Repairman Certificate can work only on those parts of the aircraft that the certificate specifically allows, such as radio or instruments, propellers, etc. The repair person who works on transmitting equipment aboard the aircraft does not need a license from the Federal Communications Commission; however, experts encourage these individuals to take the FCC exam because they may eventually become involved in satellites and satellite communication systems—the next logical step.

If you have an interest in electronics, you may choose to specialize in avionics: aircraft navigation and communication radios, weather radar systems, autopilots, and other electronic devices. This field is becoming more interesting and challenging as the technology expands. In the past, avionics were added to an airplane almost as an afterthought; today's digital aircraft depend upon sophisticated avionics systems as part of their design.

Industry observers say there is a demand for avionics specialists who are prepared to master the intricacies of the aircraft and work shoulder to shoulder with A&Ps. Because of a shortage of technicians and the complexity of aircraft systems, the industry needs more people who are cross-trained. They want A&Ps who can troubleshoot the black boxes, as a timesaver in the maintenance operations. Avionics technicians with the licensing that enables them to work on the airplane, either removing or reinstalling equipment, are especially in demand.

For more information on these career opportunities, request the Aviation Careers Series brochure entitled "Aviation Maintenance and Avionics."

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## AIRPORT CAREERS

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The airport is one of the most vital elements in our air transportation system. A well-equipped airport provides a variety of facilities for the aircraft and their crews and passengers. These include runways and taxiways, which may be lighted for day-and-night use; a terminal building with lounge areas for passengers, and possibly a restaurant and shops; automobile parking lots; ramp

areas and hangars for aircraft storage; and maintenance shops for aircraft and avionics.

There are about 17,490 airports in the United States and approximately 4,000 heliports (landing sites for helicopters). More than 5,000 of these landing facilities are used by the public. It may surprise you to learn that only about 680 airports are served by airlines. Most of the other airports are used by general aviation pilots and their aircraft.

Some airports are owned by municipalities—states, counties, and cities. Others are privately-owned businesses.

Here are descriptions of positions you can expect to find at an airport.

**Director or Manager.** Airports are usually operated by a director or manager responsible either to the private owners of the airport or to the local government authorities. The airport manager must be competent in public relations, economics, business management, civil engineering, personnel management, labor relations, and politics. The manager may be required to:

1. *Make and enforce airport rules and regulations.*
2. *Plan and supervise maintenance and safety programs.*
3. *Negotiate leases with airport tenants, such as airlines.*
4. *Survey future needs of the airport and make recommendations.*
5. *Set up the airport budget.*
6. *Promote the use of the airport.*
7. *Train and supervise employees.*

Depending upon the size of the airport, the manager may supervise an assistant manager, engineer, controller, personnel officer, maintenance superintendent, and supporting office workers.

If the manager is self-employed as a small airport operator, he or she probably also runs an aircraft repair station, sells aviation fuel, gives flight lessons, and offers air taxi or charter flights.

**Assistant Manager.** The assistant helps the manager carry out administrative responsibilities and may be in charge of maintenance employees, airport equipment, airport tenant relations, or any of the other kinds of work associated with an airport.



**Engineer.** The engineer plans improvements and expansion of the airport, checks on plans submitted by architects and contractors, oversees construction, and handles real estate and zoning problems. The engineer also may direct the maintenance of runways, taxiways, hangars, terminal buildings, and grounds.

**Safety Personnel.** Most airports with airline service employ a few firefighters and rescue workers, some of whom may be trained as emergency medical technicians or paramedics. Airport firefighters are usually skilled in both aircraft firefighting and building or structural firefighting.

**Serviceperson.** Under the direction of the airport manager or engineer, a serviceperson may perform one or more of the following jobs:

1. *Cut grass on airport grounds and maintain shrubbery.*
2. *Operate snow removal equipment.*
3. *Service runway lights and replace defective lamps and fuses.*
4. *Maintain the airport's electrical services, paint, and do the general carpentry work required for small repair jobs.*

**Terminal Concessionaire.** Airports that are served by airlines provide such services as restaurants, newsstands, gift and book shops, car rental agencies, and skycap baggage service. (Only a few airlines employ skycaps; most leave this service to terminal concessions.) Workers in the airport flight kitchens cater to airlines that do not have their own flight kitchens. While not on the airport manager's staff, workers in the concessions are mentioned here because they have a place in the total employment picture of the airport.

**Fixed Base Operator (FBO).** A fixed base operator is a retail firm that sells general aviation products or services at an airport. The FBO may employ one or two people or may have a hundred workers. One or more of the following services are offered: fueling; aircraft, avionics and/or instrument sales and service; flight training; air taxi service and charter flights; and aircraft exterior and/or interior modification.

Depending on the size and scope of the airport's operations, the FBO employs aviation mechanics, flight instructors, and aircraft sales persons. It also may employ a licensed aviation mechanic to train and supervise mechanics. FBO personnel will often arrange for ground

transportation and overnight accommodations for general aviation pilots and their passengers.

**Lineperson.** The fixed base operator employs linepersons or ramp servicepersons who meet arriving aircraft, guide them to parking spots, assist pilots in securing their aircraft, and otherwise serve the general aviation and airline customers. Linepersons also fuel and service aircraft and report to the aircraft owners any signs of incipient trouble with their planes, such as fluid leaks.

Linepersons are frequently young people who are interested in aviation and begin their aviation careers by building up experience with aircraft under the guidance of a fixed base operator. They are usually paid an hourly rate and often work part-time after school hours, on weekends, and summers. With their earnings, they can fly or take up an aviation mechanic's trade. The lineperson's job is an important basic career development step and can lead to many aviation careers.

Other personnel who work either for the FBO or airport manager include accountant/bookkeepers, secretaries, and typists. Salaries, qualifications, and training opportunities are the same as for other workers in these areas of employment.

For more information on these career opportunities, request the Aviation Careers Series brochure entitled "Airport Careers."

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## GOVERNMENT CAREERS

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An interesting alternative to working in the private sector is a career in government. Many highly responsible aviation positions are to be found in the FAA and other Federal agencies. In addition, state and local government agencies are involved in aviation.

Among its many functions in aviation, the FAA is responsible for controlling the movement of aircraft throughout the nation, establishing and maintaining electronic navigation aids, licensing pilots and aircraft mechanics, and certifying the airworthiness of aircraft.

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## THE FEDERAL AVIATION ADMINISTRATION

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**Air Traffic Control Specialist.** The air traffic control specialists at FAA airport traffic control towers (terminals) direct air traffic so it flows smoothly and efficiently. The controllers give pilots taxiing and takeoff



instructions, air traffic clearances, and advice based on numerous sources—their own observations and information they receive from the National Weather Service, Air Route Traffic Control Centers (ARTCC), Flight Service Stations (FSS), and aircraft pilots.

Terminal area controllers separate landing and departing aircraft. They transfer control of aircraft on instrument flights to the ARTCC controller when the aircraft leaves their airspace, and they receive control of aircraft on instrument flights coming into their airspace from controllers at adjacent facilities. They must be able to quickly recall registration numbers of aircraft under their control, the aircraft types and speeds, positions in the air, and also the location of navigational aids or landmarks in the area.

The ARTCC controllers give aircraft instructions, air traffic clearances, and advice regarding flight conditions during the enroute portion of flights. They provide separation between aircraft flying along the Federal airways or operating into or out of airports not served by a terminal facility.

Center controllers use radar or manual procedures to keep track of the progress of all instrument flights within the center's airspace. The controllers transfer control of aircraft to the controllers in the adjacent center or to the approach control or terminal when the aircraft enters that facility's airspace. Center controllers are required to use computer equipment, radio, radar, telephones, and other electronic communication devices. Due to the radar equipment, they work in semi-darkness, and unlike the controllers in airport traffic control towers, they never see the aircraft they control except as "targets" on the radar scope.

Air traffic control specialists also work in flight service stations. They provide preflight, in-flight, and emergency assistance to all pilots on request. They communicate information about actual and forecast weather conditions for a specific flight, relay air traffic control instructions, assist pilots in emergencies, provide airport advisory service, and initiate and participate in searches for missing or overdue aircraft.

**Electronics Technician.** Electronics technicians install and maintain electronics equipment required for navigation, communications between aircraft and ground services, and control of aircraft movements. They work with radar, radio, computers, wire communications systems, and other electronic devices at airports and along the

network of Federal airways. Preventive and corrective maintenance is part of their jobs. Electronics technicians may also specialize in design, development, and evaluation of new types of electronics equipment for the Federal airways.

**Aviation Safety Inspector.** Aviation safety inspectors develop, administer, and enforce regulations and standards concerning civil aviation safety. They monitor the airworthiness of aircraft and aircraft systems; the competence of pilots, mechanics, and other aviation personnel; and the safety aspects of aviation facilities, equipment, and procedures. Aviation safety inspectors must be knowledgeable about the operation, maintenance, and manufacture of aircraft and aircraft systems.

**Airspace System Inspection Pilot.** These pilots conduct inflight inspection of ground-based air navigational facilities to determine if they are operating correctly. They fly multi-engine, high-performance jet aircraft with specially installed, ultra-sophisticated, computerized, and automated electronic equipment. They record and analyze facility performance and report potential hazards to air navigation for correction. They assist in accident investigations by making special flight tests of any FAA navigational aids involved.

**Flight Test Pilot.** FAA flight test pilots check the airworthiness of aircraft through inspection, flight testing, and evaluations of flight performance, engine operation, and flight characteristics of either prototype aircraft or modifications of production aircraft and aircraft components that are presented for FAA type certification. They supervise flight-test designees and participate in investigations of accidents and violations of the Federal Aviation Regulations.

**Engineer.** The FAA employs engineers of all specialties to work on research and development problems in aviation, such as V/STOL (vertical short takeoff and landing) aircraft, aircraft sound, sonic boom effects, hypersonic aircraft, and new equipment and devices to increase aviation safety. Engineers also provide guidance in airport design, construction, operation, and maintenance.

**Other Professional Employees.** The FAA employs other professionals as well: airport safety specialists, urban planners, economists, mathematicians, statisticians, program officers, management analysts, and budget analysts. Physicians who specialize in aviation medicine are hired by the FAA in limited numbers. These



physicians study the effects of flying on the human body, the effects of fatigue on pilot performance, the need for oxygen above certain altitudes, vision and hearing standards, the tension and stress factors associated with the air traffic controller's job, and the standards of the various classes of medical examinations required for pilots and other members of flight crews.

**Maintenance Mechanic.** FAA maintenance mechanics maintain aids to navigation, such as the approach light systems serving airport runways. They also work on the structural, electrical, and mechanical devices that are major parts of other facilities. The job involves carpentry, painting, plumbing, electrical repairs, and masonry construction. Maintenance mechanics also install, repair, and maintain air conditioning, heating, and power-generating equipment.

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## U.S. MILITARY SERVICES

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**Military.** There are many aviation career opportunities for both men and women in the military services as enlisted personnel and officers. The Air Force offers the greatest number of aviation-related training and employment opportunities to fly as a pilot or to work as an aircraft mechanic, air traffic controller, electronic technician, flight nurse, or meteorological technician, to name a few.

**The Navy and Marine Corps** also have aviation jobs that are counterparts to those in the Air Force. Army aviation is mostly connected with the operation and maintenance of helicopters and subsonic light planes. The Army hires flight crews, ground service people, and weather specialists to support its operations. The U.S. Coast Guard operates aircraft for search and purposes. Many military aviation jobs are good preparation for similar jobs in civilian life. For example, a high percentage of airline pilots receive their principal training and experience in the military.

**Civilian.** The U.S. military services employ many civilians for jobs in aviation, such as aircraft mechanics, engineers, technicians, and general office workers (secretaries and typists, for example). These civilian jobs come under the Federal Civil Service, and employees perform many of the same tasks and receive the same wages and benefits as their counterparts in the FAA or other Federal departments and agencies.

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## OTHER FEDERAL GOVERNMENT DEPARTMENTS AND AGENCIES

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Many other Federal agencies play important roles in aviation. The National Aeronautics and Space Administration, for example, is responsible for research into the problems of flight within and outside the Earth's atmosphere.

National Transportation Safety Board accident investigators interview survivors and witnesses and examine aircraft parts, instruments, and engines. They also review maintenance and flight records to determine the probable cause of airplane accidents. Travel and field work are involved.

National Weather Service meteorologists play a key role in providing aviation weather information. Flight and weather are so interrelated that many people in aviation look upon the meteorologist as a member of the aviation team. Thus, the meteorologist deserves mention in any discussion of vocations in aviation, even though these functions are not entirely for the benefit of the aviation community.

Numerous Federal departments, bureaus, and agencies operate aircraft to carry on their work more effectively. For example, the Fish and Wildlife Service of the Department of the Interior uses airplanes to conduct wildlife censuses; the Department of Agriculture's Forest Service uses aircraft to check on aerial forest-spraying contracted to commercial operators or to oversee forest firefighting procedures; the Immigration and Naturalization Service of the Department of Justice utilizes aircraft to detect people entering the United States illegally.

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## STATE AVIATION JOBS

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Almost every state has an Aeronautics Department or Commission, which consists of a small number of aviation-minded men and women, usually appointed by the Governor to make policies about aviation activities within the state. Persons appointed may not be considered employees and may be paid only expenses connected with their attendance at meetings. If the state's department or commission is well-funded, it may employ people to work in the areas of airport design and



operation, flight safety, and promotion of aviation activities in the state. Positions include administrative personnel, pilots, field service representatives, safety officers, engineers, and aircraft mechanics, among others.

For more information on these career opportunities, request the Careers in Aviation brochure entitled "Government."

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## WOMEN IN AVIATION

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Even in aviation's early days, women pilots equalled male pilots in displays of ambition, skill and fortitude.

Amelia Earhart and Jacqueline Cochran come readily to mind. In commercial aviation, however, women were for many years restricted to "women's jobs" as flight attendant, reservations agent, etc.

Times have changed! Today, a woman can be an airline captain, an astronaut, or anything she wants to be. Some of these women have told their inspiring stories in the Careers in Aviation brochure "Women in Aviation." It's yours for the asking.

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## Aviation Education Officers

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### *FAA Headquarters*

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### *Aeronautical Center*

Mr. Robert Hoppers, AAC-5  
Room 356, Headquarters Building  
P.O. Box 25082  
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(405) 680-7500

### *Technical Center*

Ms. Michele Pareene, ACM-100  
Human Resource Management Division  
Atlantic City International Airport  
Atlantic City, NJ 08405  
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### *Alaskan Region*

Ms. Mary Lou Wojtalik, AAL-5B  
222 West 7th Avenue, Box 14  
Anchorage, AK 99513-7587  
(907) 271-5293  
STATE: Alaska

### *Central Region*

Ms. Patrice Shalda, ACE-5  
601 East 12th Street  
Federal Building, Room 1501  
Kansas City, MO 64106  
(816) 426-5449  
STATES: Iowa, Kansas, Missouri, and  
Nebraska

### *Eastern Region*

Mr. Charles Pagnini, AEA-15C  
JFK International Airport  
Federal Building  
Jamaica, NY 11430  
(718) 553-1056  
STATES: Delaware, District of  
Columbia, Maryland, New Jersey,  
New York, Pennsylvania, Virginia, and  
West Virginia

### *Great Lakes Region*

Mr. Lee Carlson, AGL-5A  
O'Hare Lake Office Center  
2300 East Devon Avenue  
Des Plaines, IL 60018  
(312) 694-7042  
STATES: Illinois, Indiana, Michigan,  
Minnesota, North Dakota, Ohio, South  
Dakota, and Wisconsin

### *New England Region*

Ms. Shelia Bauer, ANE-8  
12 New England Executive Park  
Burlington, MA 01803  
(617) 273-7064  
STATES: Connecticut, Maine, New  
Hampshire, Rhode Island, Vermont, and  
Massachusetts

### *Northwest Mountain Region*

Ms. Shelly McGillivray, ANM-5E  
1601 Lind Avenue, SW  
Renton, WA 98055  
(206) 227-2804  
STATES: Colorado, Idaho, Montana,  
Oregon, Utah, Washington, and  
Wyoming

### *Southern Region*

Ms. Kathleen Bergen, ASO-5  
PO Box 20636  
Atlanta, GA 30320  
(404) 763-7201  
STATES: Alabama, Florida, Georgia,  
Kentucky, Mississippi, North Carolina,  
South Carolina, Tennessee, Puerto Rico,  
and the Virgin Islands

### *Southwest Region*

Ms. Debra Myers, ASW-5  
4400 Blue Mound Road  
Ft. Worth, TX 76193-0005  
(817) 624-5804  
STATES: Arkansas, Louisiana, New  
Mexico, Oklahoma, and Texas

### *Western-Pacific Region*

Mr. Hank Verbais, AWP-5  
PO Box 92007  
Worldway Postal Center  
Los Angeles, CA 90009  
(213) 297-1431  
STATES: Arizona, California, Nevada,  
and Hawaii

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## Aviation Education Resource Centers

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### **Alabama**

Alabama Aviation  
Technical College  
Ms. Megan Johnson, Director  
Learning Resource Center  
PO Box 1209  
Ozark, AL 36361  
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University of North Alabama  
Ms. Michele R. Walker  
Programming Coordinator  
UNA Box 5145  
Florence, AL 35632-0001  
(205) 760-4623

University Aviation Association  
Mr. Gary W. Kiteley  
Executive Director  
3410 Skyway Drive  
Opelika, AL 36801  
(205) 844-2434

### **Alaska**

University of Alaska Fairbanks  
Mr. Dennis Stephens  
Collection Development Officer  
Elmer E. Rasmuson Library  
Fairbanks, AK 99775-1006  
(907) 474-6695

### **Arizona**

Embry-Riddle Aeronautical University  
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Prescott, AZ 86301  
(602) 771-6673

### **California**

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San Diego, CA 92108  
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San Jose State University  
Dr. H. Gene Little  
Chairman, Department of Aviation  
1 Washington Square  
San Jose, CA 95192-0081  
(408) 924-6580

Museum of Flying  
Mr. Harvey Ferer  
2772 Donald Douglas Loop North  
Santa Monica, CA 90405  
(310) 392-8822

### **Colorado**

U.S. Space Foundation  
Dr. Jerry Brown  
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### **Connecticut**

Connecticut Department of  
Transportation  
Bureau of Aeronautics  
Ms. Tambri Graville  
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PO Drawer A  
Wethersfield, CT 06109  
(203) 566-4417

### **Delaware**

Delaware Teachers Center  
Ms. Stephanie Wright  
3401 Green Street  
Claymont, DE 19703  
(302) 792-3806

### **Florida**

Embry-Riddle Aeronautical University  
Ms. Patricia Fleener-Ryan  
AvEd Teacher Resource Center  
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Florida Institute of Technology  
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Melbourne, FL 32901-6988  
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Florida Memorial College  
Mr. Anthony J. Sharp, Director  
Division of Airway Science  
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Miami, FL 33054  
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### **Georgia**

Conyers Middle School  
Ms. Viki Dennard  
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### **Hawaii**

Mid-Pacific Institute  
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2445 Kaala Street  
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### **Idaho**

Idaho State Bureau of Aeronautics  
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### **Illinois**

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### **Kansas**

Kansas State University-Salina  
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### **Louisiana**

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### **Maine**

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### **Massachusetts**

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Museum of Science  
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Westfield State College  
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### **Nebraska**

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### **New York**

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3801 Campus Drive  
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### ***Vermont***

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### ***Virginia***

Virginia Aviation Museum  
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### ***Washington***

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