

CAREERS

PROFESSIONAL AVIATION

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A JOB DESCRIPTION & CAREER OUTLOOK BULLETIN





O V E R V I E W

***Aviation** is a rapidly expanding industry with incredible career opportunities. The future predictions for the aviation industry are that there will be a tremendous rise in people traveling by air and using air services.*

A career in aviation is an excellent choice for students today. Salaries continue to steadily increase and are becoming highly competitive with other technology industries. The most important benefit of a career in aviation, however, is tremendous job satisfaction. Aviation is an exciting and challenging field, with a rich history and an ever-changing future. Those who choose careers in aviation can look forward to working with the latest state-of-the-art technology. They can also look forward to a lifetime of knowing that their careful work makes flying safe for everyone.

AIRCRAFT MAINTENANCE TECHNICIAN

JOB DESCRIPTION

Aircraft maintenance technicians have the vital job of keeping aircraft in safe flying condition. The maintenance technician is the only one who can perform maintenance and repairs to an aircraft and insure it is safe to fly. Maintenance technicians perform periodic inspections and routine maintenance. They also correct any discrepancies that may have occurred during the operation of the aircraft. Maintenance is done according to approved guidelines for each individual aircraft. Aviation maintenance technicians are just as likely to be sitting at computers translating technical data as they are replacing a reciprocating or turbine engine or making a repair that maintains the structural integrity of the fuselage. Today's maintenance technicians must possess sophisticated computer skills to troubleshoot and diagnose complex aircraft systems. They are also responsible for detailed knowledge and understanding of all the systems on the aircraft such as fuel, hydraulic, electrical, and pneumatic systems. The maintenance technician must also prepare forms and records related to the maintenance performed on the aircraft. Rapidly changing aircraft technology means that they are constantly updating their skills and knowledge to maintain aircraft in safe flying condition. Advances in computer technology, aircraft systems, and the materials used to manufacture airplanes have made this career a more highly professional and technical occupation than ever before. Aircraft maintenance technicians are highly-skilled, dedicated professionals. Every day thousands of lives depend on their diligence and attention to detail.

JOB OPPORTUNITIES AND CAREER OUTLOOK

The outlook for future employment in the Aircraft Maintenance field is excellent.

A starting salary is about \$16 to \$25 an hour. Annual salaries of \$55,000 to \$95,000 a year are possible for experienced maintenance technicians. Benefits are excellent and often include flight privileges as well as vacation, life and health insurance, and retirement benefits. Experienced aviation maintenance technicians can also advance to positions of greater responsibility in aviation-related industries, which can lead to even better compensation.

HOW TO GET THERE

The Federal Aviation Administration, or FAA, is responsible for certification, regulation and compliance in assuring aviation safety. Any person involved in operating or maintaining an aircraft must hold an FAA certificate. The FAA certifies aircraft maintenance technicians with Airframe and Powerplant mechanic ratings.

There are many public and private schools that offer FAA approved Aviation Maintenance programs. These programs range in length from 18 to 24 months and educate students in all facets of aviation maintenance. They include classroom theory and emphasize practical, hands-on applications through extensive shop experience. In addition, many schools offer the option of an Associate of Applied Science Degree and students can then transfer to a four-year institution to complete their Bachelors Degree requirements. After completing the required coursework for an Aviation Maintenance Technician, students can take the FAA written, oral, and practical tests for the Airframe and Powerplant certificate. Most aviation companies require the Airframe and Powerplant certificate for anyone performing repairs on U.S. registered aircraft.



AIRCRAFT ELECTRONICS SPECIALIST AND AVIONICS TECHNICIAN

JOB DESCRIPTION

Avionics is the installation, calibration, and repair of electronic equipment on an aircraft such as the communication and navigation radios, weather radar systems, autopilot systems, and other electronic instruments. Today's aircraft also depend on sophisticated electronic equipment to help monitor the systems on the aircraft such as fuel quantity, hydraulics, and flight controls. As aircraft manufacturers have incorporated more complex electronic equipment and technology into the aircraft, the demand for more knowledge in the repair of these systems has increased. Aircraft electronics and avionics technicians work closely with the maintenance technicians to keep all the systems on the aircraft in safe working condition. An avionics or electronics specialist may work on equipment in an actual aircraft or they may work in a repair shop on equipment that has been removed from the aircraft and sent to them for repair. Duties include routine maintenance, troubleshooting or localizing and diagnosing causes of equipment malfunction, replacing faulty components, tracing circuitry, and aligning and adjusting repaired equipment. The avionics technician must also prepare forms and records related to aircraft and avionics equipment maintenance. An aircraft electronics or avionics technician must have the ability to listen and communicate effectively with people.

JOB OPPORTUNITIES AND CAREER OUTLOOK

There is currently a shortage of Avionics Technicians. The demand for avionics professionals has increased drastically as aviation manufacturers and operators have incorporated more sophisticated electronic technology into the systems of the aircraft. The emergence of digital data communication as well as satellite-based flight management

continues to make avionics a major component of aviation maintenance. The current starting average salary range for this career field is from \$16 to \$25 an hour. All areas of the aviation industry are currently looking for these skilled professionals.

HOW TO GET THERE

Avionics technology programs are generally one or two-year courses of study in an electronics or avionics program at a community or technical college. There are also private schools that offer electronics or avionics training. The classes usually combine classroom study with extensive actual experience working on aviation electronics systems. Once a student has knowledge of electricity and electronics, they may test for a Federal Communications Commission (FCC) license. Many avionics repair stations employ experienced technicians who hold an FCC license, but the most valuable personnel in aviation maintenance and avionics are trained aviation maintenance technicians who have both an A & P certification and training in avionics/electronics.

AIR TRAFFIC SERVICES

JOB DESCRIPTION

Air traffic specialists have been described as the guardians of the airways. Using both radar and visual information, their job function is to direct air traffic so it flows smoothly, efficiently, and, above all, safely. Tower controllers work from airport towers and give pilots taxiing and takeoff instructions, air traffic clearances, and advice based on their own observations as well as relay information from the National Weather Service, flight service stations, and other pilots. One of their primary duties is to provide and maintain separation between landing and departing aircraft in the vicinity of the airport. Enroute controllers keep track of airplanes once they leave the airspace around a particular airport. Enroute controllers keep the aircraft travelling along "highways in the sky" called airways. Flight service specialists provide pilots

with weather information, suggested routes, terrain details, and other information on that station's particular area.

JOB OPPORTUNITIES AND CAREER OUTLOOK

Prospects for employment are excellent. Air traffic is expected to increase dramatically even though advances in technology and computer systems will allow controllers to handle more traffic. The FAA employs most of the controllers. Some controllers work for the Department of Defense or for the operators of non-FAA towers. The annual salary range for air traffic controllers is between \$36,000 to \$126,000 annually. The worker's responsibilities and the complexity of the position figures greatly into determining the controller's pay.

HOW TO GET THERE

Any person interested in becoming an air traffic controller must take an FAA aptitude test and must also pass a physical examination and a background check prior to entering an air traffic controller (ATC) training program. In addition, there are age limitations: new air traffic controllers must be under age 31 on their date of hire, so students must be under age 30 when they beginning their training. Most programs require that new students will have completed a two or four year college degree before embarking on ATC training. ATC programs generally last less than a year and combine classroom work with extensive simulator work and hands-on learning. After a student completes the training, he or she must pass a series of FAA examinations before being eligible for hire. Some colleges have two-year or four-year degree programs that provide all the necessary training to prepare a student for a career in air traffic control plus an associates or bachelors degree. There are also post-college programs that prepare students for a career as an air traffic controller.



COMMERCIAL PILOTS

JOB DESCRIPTION

One of the exciting and challenging careers in aviation is that of the pilot. In addition to the well-known airline pilot, there are many other pilot jobs. Pilots also fly while doing more unusual tasks, including crop-dusting, law enforcement work, search and rescue missions, traffic monitoring, and fire fighting. Many pilots begin their careers flying smaller planes as a charter pilot or doing other intermittent commercial jobs. Others take jobs as co-pilots for regional airlines. All pilots must work their way to the job they want by piloting civilian and/or military flights, gaining experience through logging flying hours in a variety of aircraft, and mastering additional skills.

A pilot must do more than simply climb aboard and fly the airplane. A flight must be planned. A pilot must check weather conditions and choose a route that will be as smooth and safe as possible. This flight plan must be filed with air traffic control. Pilots must also carefully check the aircraft to make sure the engine, controls, and other systems are functioning correctly. Once a flight is over, pilots must complete records of their flight. Depending on a pilot's particular job, she or he may have other non-flying duties as well; some pilots have support staff to load an aircraft, refuel, and do additional paperwork, but others do this work themselves.

JOB OPPORTUNITIES AND CAREER OUTLOOK

By 2020 the number of airline passengers is expected to grow to one billion, an increase of 50% over today's numbers. This expected

growth in commercial airline passenger and cargo traffic, along with more corporate flying as a result of the globalization of business, has resulted in an increased demand for pilots. There are many opportunities for pilots who have the hours and ratings needed by the industry. Salaries often depend on the type of aircraft flown and the experience of the pilot. General aviation flying jobs range from \$24,000 to \$100,000 a year, and the annual salary for an airline pilot ranges from \$24,000 to \$200,000 a year. However, there is considerable competition for the top airline jobs, as airline pilots earn some of the highest wages in the nation.

HOW TO GET THERE

The Federal Aviation Administration, FAA, is responsible for the certification of all pilots. All pilots who get paid to transport cargo or passengers must have a commercial pilot's license from the FAA. The first step is to take flight instruction to obtain a private pilot's license. An additional instrument rating is required to fly during times of low visibility. There are other additional ratings as well, all requiring that a pilot gain more hours of varied flight experience and then pass a test. All these licenses require passing both written tests and an examination by a flight instructor.

Flight academies and some colleges and universities offer course work for the career pilot. The major airlines generally require a college degree for airline pilots.



Minnesota Department of Transportation, Office of Aeronautics | Aviation Education Section

222 East Plato Boulevard | Saint Paul, Minnesota, 55107 | 1-800-657-3922 |

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