

Aviation Careers Toolkit for Middle and High School Students

Non-Career Pilot Certificates:

Student Pilot License:

- Must be 16 years of age
- Be fluent in English
- Student pilots are under the control of a flight instructor
- Student pilots may not carry passengers
- Student pilots may fly solo (by themselves) with an instructor's sign off

Sport Pilot:

- Must be 17 years of age
- Be fluent in English
- Have a valid U.S. Driver's License
- Pass a written exam (after completing a ground school)
- Receive at least 20 hours of flight instruction and solo flight time
- Pass a practical flying test

Note: limited to certain aircraft, daylight only, below 10,000 ft, cannot fly in some airspace (class A), must have 3 miles of visibility to fly, one passenger only, in the U. S. only.

Recreational Pilot:

- Must be 17 years of age
- Be fluent in English
- Third class medical certificate
- Pass a written exam (after completing a ground school)
- Receive at least 30 hours of flight instruction and solo flight time.
- Pass a practical flying test

Note: must stay within 50 nm of departing airport, daylight only, prohibited from flying in controlled airspace. Very few of these issued.

Private Pilot:

- Must be 17 years of age
- Be fluent in English
- Third class medical certificate
- Pass a written exam (after completing a ground school)
- Receive at least 40 hours of flight instruction and solo flight time.
- Pass a practical flying test.

Note: may not fly for compensation or hire. Equivalent to a standard driver's license.

Professional Pilot Certificates:

Commercial Pilot

- Must be 18 years old
- Be fluent in English
- Second class medical certificate
- Minimum of 250 hours of flight time
- Pass a written exam and practical flying test

Note: instrument ratings and multi-engine ratings are added to the Commercial Certificate

Note: with a commercial license, a pilot may conduct some operations for compensation or hire (be paid to fly). An ATP is required for airlines.

Air Transport Pilot (ATP)

- Must be 23 years old
- Must have commercial license and instrument rating
- Be fluent in English
- First class medical certificate
- Minimum of 1500 hours of flight time
- Pass a written exam and practical flying test.

Note: may fly for airlines.

Type Ratings

Type ratings are added to a pilot's license for a specific model of aircraft. It requires training and testing for that model and type of airplane.

Flight Instructor Certificate

- Must be 18 years old
- Be fluent in English
- Hold at least a Commercial Pilot Certificate
- Pass a Fundamentals of Instruction written exam
- Pass a written exam and practical flying test.

Note: May train pilots, provide flight reviews, sign off on knowledge and practical tests, etc.

How to Become a Professional Pilot

The Federal Aviation Administration sets the requirements for pilot certificates, and regardless of which route you choose to take, you must meet the same requirements and obtain the same pilot certificates.

Attend an aeronautical university:

Virginia Colleges and Universities with Aviation Programs:

- Averett University
- Blue Ridge Community College
- Hampton University
- Liberty University

These programs often have agreements in place with airlines. Contact the school for additional information.

Train at an airport-based flight school:

Thirty (30) of Virginia's 65 public use airports have flight schools.

Contact your local airport for more information or visit the Virginia Department of Aviation's website for a list of flight schools.

Apply for an airline sponsored flight school:

Some airlines now have their own flight training programs. They have varying requirements, but each involves an application process and successful candidates are sent to a flight school operated by the airline.

Join the Military:

Upon completing their military service, military pilots can undergo a process to obtain their Federal Aviation Administration pilot licenses.

Virginia Department of Aviation

www.doav.virginia.gov

Pilot Careers (salaries: \$70,000-\$600,000)

Types of Aircraft Pilots:

- Major Airlines
- Regional Airlines
- Corporate and Business Aviation
- Cargo Pilot
- Charter Pilot and Air Taxi Pilot
- Ferry Pilot and Aircraft Salesperson Pilot
- Flight Instructor
- Medical and Air Ambulance Pilot
- Government Service Pilot
- Law Enforcement Pilot
- Military Pilot
- Fire Fighting Pilot
- Agricultural Pilot
- Banner Towing Pilot
- Media and Patrol Pilot
- Air Tour Pilot
- Airshow Stunt Pilot
- Contract Pilot
- Test Pilot
- Astronauts and Space Pilot
- Drone Pilot

Aviation Maintenance Technicians

Aviation Maintenance Technicians inspect, troubleshoot, repair and maintain aircraft. They keep records of their work, test aircraft parts, and work in quality assurance.

How to Become an Aviation Maintenance Technician

- Must be 18 years old
- Be fluent in English
- Have a high school diploma or equivalent
- Complete training at an AMT school (approx. 18 months)
- Pass FAA written, oral, and practical exams

Note: aviation maintenance experience may be gained through the military or through on-the-job training.

Where Aviation Maintenance Technicians Train in Virginia:

- Aviation Institute of Maintenance – Manassas
- Aviation Institute of Maintenance – Virginia Beach
- Liberty University
- Blue Ridge Community College

How Much Do Aviation Maintenance Technicians Earn in Virginia? (salaries: \$63,000-\$134,000)

Where Aviation Maintenance Technicians Work:

- Airlines
- Fixed Base Operators
- Manufacturers
- Repair Stations
- Aviation Maintenance Schools
- Business/Corporate Aviation

Specialties Include:

- Avionics
- Balloons and Airships
- Rotorcraft
- Unmanned Aircraft Systems

Aviation Management

Aviation managers are responsible for all aspects related to the operation and maintenance of aircraft and airports. These include operations, maintenance, regulatory compliance, crew/employee management, financial management, hangar and storage, charter and lease management, record keeping, insurance and risk management, and customer service.

How to become an Aviation Manager

Education may involve a bachelor's degree in a field such as aviation management, business administration, etc. or gained experience through internships or entry level positions. Advanced education, including a Master's degree, may be considered.

Develop skills in leadership, strategic planning, and knowledge of aviation regulations.

Obtain professional certifications.

Where do Aviation Managers train in Virginia

- Averett University
- Hampton University
- Liberty University
- University of Virginia Darden School of Business (Certificate in Corporate Aviation Management)

How much do Aviation Managers Earn?

It varies depending on the exact job. The average salary of Aviation Managers is generally between \$88,449.00 and \$179,544.00 in the United States.

Where do Aviation Managers Work?

- Airlines
- Airports
- Aircraft Manufacturers
- Corporate Flight Departments
- Government Agencies

Air Traffic Controllers

Air Traffic Controllers monitor and direct aircraft, provide information to pilots, handle emergencies, and work in different locations.

How to Become an Air Traffic Controller

- Be a U.S. citizen and meet the age requirements
- May earn an associate or bachelor's degree from an FAA-approved program.
- Apply for the position and be selected.
- Pass a medical exam and background check.
- Pass FAA pre-employment tests.
- Attend the FAA Academy
- Complete on-the-job training
- Become certified.

How much do Air Traffic Controllers earn?

The average annual wage for air traffic controllers is \$101,385.00.

Where do Air Traffic Controllers work?

- Control Towers (FAA and Private)
- Approach Control Facilities
- Enroute Centers

Engineer

Aviation engineers design, develop, test, and maintain aircraft. Their responsibilities also include collaborating, ensuring compliance, implementing safety, and meeting timelines.

What Skills Does an Engineer Need?

- Engineering science and technology knowledge
- Math skills
- Design skills
- Physics knowledge
- Analytical thinking skills
- Verbal communication skills
- Knowledge of computer operating systems, hardware and software.

What Education Does an Engineer Need?

Bachelor's degree in aerospace engineering, aeronautical engineering, or a related field like mechanical engineering, electrical engineering or physics.

How Much Do Aviation Engineers Earn?

Depending on experience and location aviation engineers earn \$63,000 to \$141,000 per year. The median is \$130,720 per year.

Where Do Aviation Engineers Train?

- University of Virginia (Aerospace Engineering)
- Virginia Tech (Aerospace Engineering)
- Old Dominion University (Aerospace Engineering)
- Virginia Commonwealth University (Master of Science in Engineering with a concentration in aerospace engineering)
- Virginia Military Institute (VMI) (Aerospace Engineering)

Where Do Aviation Engineers Work?

Aerospace Manufacturers

Government Agencies

Research and Development (universities and research facilities)

Consulting Firms

Airlines

Military

Software Companies

Airport Careers

- Airport Manager
- Airport Operations Manager

- Airline Food Service Worker
- Retail Sales
- Customer Service Agents
- Airport Cleaning (including aircraft cabin cleaner, aircraft detailer, etc.)
- Aircraft Fueler

- Emergency Response Team (airport firefighters)
- Airport Police Officer
- Airport Security Officer (includes K9 handler)

- Ramp Agent (includes Airline Baggage Handler)
- Airline Reservation Agent

- Avionics Technician (works on electronics/radios)
- Aircraft Maintenance Technician
- Aircraft Mechanic

- Pilot (Airline, Corporate, Government, Charter/Air Taxi, MedEvac, Sightseeing, Flight Instructor, etc.)
- Flight Attendant
- Flight Dispatcher

- Air Traffic Controller

- Aviation Education and Training

- Airport Engineer
- Airport Planner
- Aeronautical Engineer

Other Aviation Jobs

- Unmanned Aircraft System (UAS) Pilot
- Aviation Attorney
- Wildlife Survey Pilot/Powerline Patrol Pilot/Agricultural Pilot
- Aerial Firefighting
- Experimental Test Pilot
- Flight Simulator Software Development
- Aircraft Interior Designer
- Airshow Performer