

# CARGILL



## Becoming a Professional Aviator

A Guide for Students, Parents and Educators



# AERONAUTICAL ACADEMY





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**CARGILL AERONAUTICAL @ CAPITAL CITY AIRPORT**

## **SECTION I: INTRODUCTION**

### **PILOTING AND FLIGHT TRAINING**

# SECTION I: INTRODUCTION

## WHAT IS AN AVIATOR?

“An aircraft pilot or aviator is a person who controls the flight of an aircraft by operating its directional flight controls. Some other aircrew members, such as navigators or flight engineers, are also considered aviators, because they are involved in operating the aircraft's navigation and engine systems”

# SECTION I: TYPE AND NUMBER OF PILOTS

01

## PRIVATE PILOT

A private pilot (PPL) license is an FAA airman certificate issued to an applicant after passing the applicable knowledge and practical tests. It allows the holder to fly for private purposes, which with very few exceptions, precludes receiving compensation.

02

## COMMERCIAL PILOT

A commercial pilot license (CPL) is a type of pilot license that permits the holder to act as a pilot of an aircraft and be paid for his/her work.

03

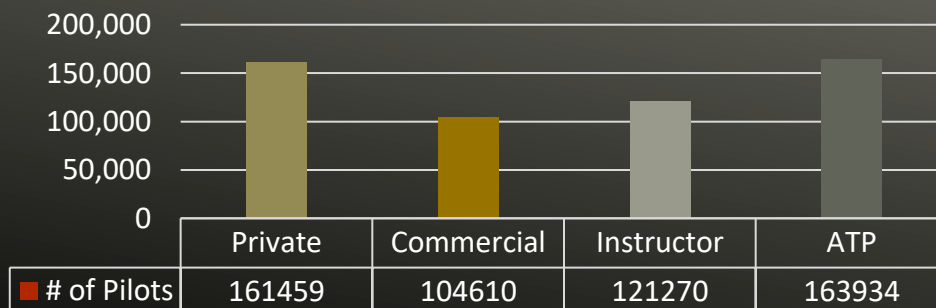
## FLIGHT INSTRUCTOR

Flight instructors (CFI) in the United States must hold at least a commercial pilot certificate or ATP (airline transport pilot) certificate. Individuals wishing to give instruction in airplanes or powered-lift aircraft are additionally required to hold an instrument rating in the desired category and class.

04

## AIRLINE TRANSPORT

An Airline Transport Pilot is the highest level of aircraft pilot certificate, allowing a pilot to act as pilot in command on a scheduled air carrier aircraft, the kind of plane you fly if you buy a ticket on a commercial airliner.



# SECTION I: PILOT SHORTAGE

## 2021 STUDY BY OLIVER WYMAN

“The most important question is not whether a pilot shortage will reemerge, but when it will occur and how large the gap will be between supply and demand. Based on a modest recovery scenario, we believe a global pilot shortage will emerge in certain regions no later than 2023 and most probably before. However, with a more rapid recovery and greater supply shocks, this could be felt as early as late this year. Regarding magnitude, in our most likely scenarios, **there is a global gap of 34,000 pilots by 2025. This could be as high as 50,000 in the most extreme scenarios.** Eventually, the impact of furloughs, retirements, and defections will create very real challenges for even some of the biggest carriers. One cushion airlines have created consists of 100,000 pilots still on payroll but flying reduced schedules or on voluntary company leave. In the US, such programs have been very popular and will provide the airline some flexibility once the industry begins to recover.”

“Perhaps more important than the global view are the regional projections. Recovery is not expected to be uniform across the globe and each region has its own demographic considerations. In our analysis, North American, Asia Pacific, and the Middle East are likely to see the largest shortages while Europe, Africa, and Latin America remain closer to equilibrium. **In North America, with an aging pilot population and heavy use of early retirements, the shortage reemerges quickly and is projected to reach over 12,000 pilots by 2023 — 13 percent of total demand.** However, Asia Pacific, with a faster growth trajectory will surpass this by the end of the decade with a projected shortage of 23,000 pilots by 2029. This can have real implications on the timing and depth of regional shortages as pilots migrate to areas of opportunity, potentially accelerating or deepening shortages in other regions.”

## **SECTION II: AVIATORS**

### **PILOT CAREERS AND REQUIREMENTS**



## SECTION II: COMMON CAREER PATHS AND REQUIREMENTS

### AIRLINE TRANSPORT PILOT (ATPs)

#### MAINLINE & DOMESTIC



- Mainline pilots travel worldwide. Domestic pilots are much like mainline pilots. The main difference tends to be the range and arduousness of the flight path.
- The typical duties and responsibility of an airline pilot includes inspecting the plane, its control systems and its instruments before a flight; checking the weather conditions are suitable for flying; creating a flight plan, based on these weather conditions; ensuring that the plane has enough fuel, operating controls and instruments whilst the plane is flying and ensuring passengers are safe and communicating with them through the public address system

#### CARGO



- These are the UPS, FedEx, and Royal Mail workers of the air travel world. Large domestic and international shipping companies such as these often need to ship their packages overseas to make deliveries, and they hire pilots to do it.
- Cargo pilots work long hours to make deliveries on time.
- They can also enjoy the security of working for an established delivery company, with all the benefits that entails, such as a healthcare plan.
- The corporate structure means that cargo pilots enjoy a favorable pay scale.

## **SECTION II: AIRLINE TRANSPORT PILOT REQUIREMENTS**

### **CERTIFICATES AND RATINGS**

Airline pilots must hold an Airline Transport Pilot (ATP) Certificate and be type-rated. A type rating is required by standardized agencies, such as the FAA, in order to operate certain types of aircraft. This rating is in addition to the initial commercial pilot's license.

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### **FLIGHT TIME**

Airline Transport Pilots must have 1,500 hours of flight time. The FAA authorizes institutions of higher education to certify graduates of specific aviation degree programs for a restricted privileges ATP certificate with reduced aeronautical experience.

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### **MEDICAL REQUIRMENTS**

A first-class medical certificate is required for Airline Transport Pilots. This certificate has the most restrictive medical standards. The holder of a medical certificate shall be mentally and physically fit to exercise safely the privileges of the applicable license.

## SECTION II: COMMON CAREER PATHS AND REQUIREMENTS

### CERTIFIED FLIGHT INSTRUCTOR

PART 61  
&  
PART 141



- Flight instructors are responsible for teaching students how to fly in a variety of settings using methods that include textbook education, simulators and live flight training.
- All flight instructors must have a Commercial Pilot License and Instrument Rating.
- Flight instructors often hold a variety of certificates such as CFI, CFI-I and MEI.

## **SECTION II: FLIGHT INSTRUCTOR REQUIREMENTS**

### **CERTIFICATES AND RATINGS**

CFI: Required to train student pilots and private pilots seeking a Commercial Pilot License. CFI-I: Required to train pilots seeking an instrument rating. MEI: Required to train pilots seeking a Multi-Engine rating.

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### **FLIGHT TIME**

Commercial Pilots must have a minimum of 250 hours of flight time. Additional flight time might be required depending on the aircraft and type of flying.

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### **MEDICAL REQUIRMENTS**

A pilot must have at least a 3rd class medical to act as pilot-in-command of an aircraft while instructing.

## SECTION II: COMMON CAREER PATHS AND REQUIREMENTS

### COMMERCIAL PILOT (CPL)

#### AGRICULTURAL PILOT



#### FIRE FIGHTER PILOT



- While these pilots may not get the same amount of press as military jobs and they do not have the benefit of travel like airline transport pilot jobs, they are critical. Our crops must be watered and dusted somehow, and crop dusters make this process proceed far faster and more efficiently than would be the case otherwise. They are thus an invaluable part of our modern agricultural industry, especially in states like Kansas and Iowa.
- An agricultural pilot can make between \$40K to \$50K, with the potential to make more as they become more experienced. There is also the potential to increase their pay by forging connections and contracts with farmers.
- Few things are more indiscriminate in the way they target and destroy lives than out of control wildfires. One of the most crucial factors in helping keep these fires in check is the effectiveness of firefighting pilots.
- These pilots fly over large wildfires and dump massive quantities of water and flame retardant on them, thereby helping fight the spread of the flames.
- The salary tends to be on a government pay scale. These are jobs where you can really have influence by helping save people's homes, lives, and livelihoods.

## SECTION II: COMMON CAREER PATHS AND REQUIREMENTS

### COMMERCIAL PILOT (CPL)

#### GOVERNMENT SERVICE



- Government service pilot devote themselves to public service.
- Pilots who work for the government can fly with different agencies, including the FAA, FBI, DEA, Homeland Security, the National Guard, Coast Guard, State Police, and more.
- As with the nature of the work itself, government service pilots can expect to see variation in their salaries. As general estimates go, these pilots often make in the high five-figure to low six-figure range.

#### PERSONAL PILOT



- There is no shortage of private planes. Personal pilots are most often the ones that operate these aircraft due to the complexity. In addition, businesspeople, actors, athletes, models, and others are often too busy to pilot them themselves.
- Pay and rewards vary depending on the client.

## **SECTION II: FLIGHT INSTRUCTOR REQUIREMENTS**

### **CERTIFICATES AND RATINGS**

Commercial pilots must have a commercial pilot license and an instrument rating. Depending on the job and aircraft, special training and/or an endorsement may be required.

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### **FLIGHT TIME**

Commercial Pilots must have a minimum of 250 hours of flight time. Additional flight time might be required depending on the aircraft and type of flying.

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### **MEDICAL REQUIRMENTS**

A second-class medical covers the same items as the third-class but is slightly more detailed and warrants higher standards for vision.

## SECTION II: COMMON CAREER PATHS AND REQUIREMENTS

### FIGHTER PILOTS & MORE



### MILITARY PILOT

- Well suited for individuals with a passion for flying planes as well as serving your country. This will require enrolling through the armed forces and following their training program.
- Pilots are subject to basic health requirements such as ensuring that they have good eyesight. Military branches such as the USAF or RAF have even more strenuous requirements.
- Only professional pilots who are trained in combat. Military pilots often get to fly the latest military aircraft.
- Flying in the military helps military pilots accumulate flight hours, which can then count towards their civilian pilot license and future pilot jobs.



# SECTION II: MILITARY PILOT CAREERS

## AIR FORCE

- Astronaut
- Attack Remotely Piloted Aircraft Pilot
- Bomber Pilot
- Experimental Test Pilot
- Experimental Test Remotely Piloted Aircraft Pilot
- Fighter Pilot
- Generalist Pilot
- Generalist Remotely Piloted Aircraft Pilot
- Mobility Pilot
- Reconnaissance Remotely Piloted Aircraft Pilot
- Reconnaissance/Surveillance/Electronic Warfare Pilot
- Remotely Piloted Aircraft (RPA) Pilot
- Remotely Piloted Aircraft (RPA), MQ-1
- Rescue Pilot
- Special Operations Pilot
- Special Operations Remotely Piloted Aircraft Pilot
- Trainer Pilot

## NAVY

- Aviator
- Flight Instructor - NFO, Fleet Aircraft Operational
- Flight Instructor - Pilot, Fleet Aircraft Operational
- Flight Instructor, Training Planes
- Naval Flight Officer Instructor, Training Planes
- Officer in Charge, Aviation Unit or Detachment
- Special Project Pilot
- Squadron Commanding Officer
- Squadron Executive Officer
- Test Pilot

## MARINES

- Aircraft Division Lead (DL) Qualification
- Aircraft Section Lead (SL)
- AV-8B Air Combat Tactics Instructor (ACTI) Qualification
- Basic Fixed Wing Pilot
- Blackjack (MQ-21) Specialist
- Colonel, Naval Aviator/Naval Flight Officer/Unmanned Aircraft System Officer
- EA-6B Defensive Tactics Instructor (DEFTACTI) Qualification
- Flight Leader (FL) Qualification
- Group 3 UAS MAGTF Officer
- Marine Division Tactics Instructor
- Pilot VMGR, KC-130 Co-Pilot (T2P/T3P)
- Pilot VMM, FRS Basic V-22
- Pilot VMM, V-22 Qualified
- Pilot VMR C-20/C-37 Qualified
- Pilot VMR C-9 Qualified
- Pilot VMR UC-12B Qualified
- Pilot VMR UC-35 Qualified
- Strategic Refueling Area Commander (STRATRAC)
- Test Pilot/Flight Test Project Officer

## ARMY

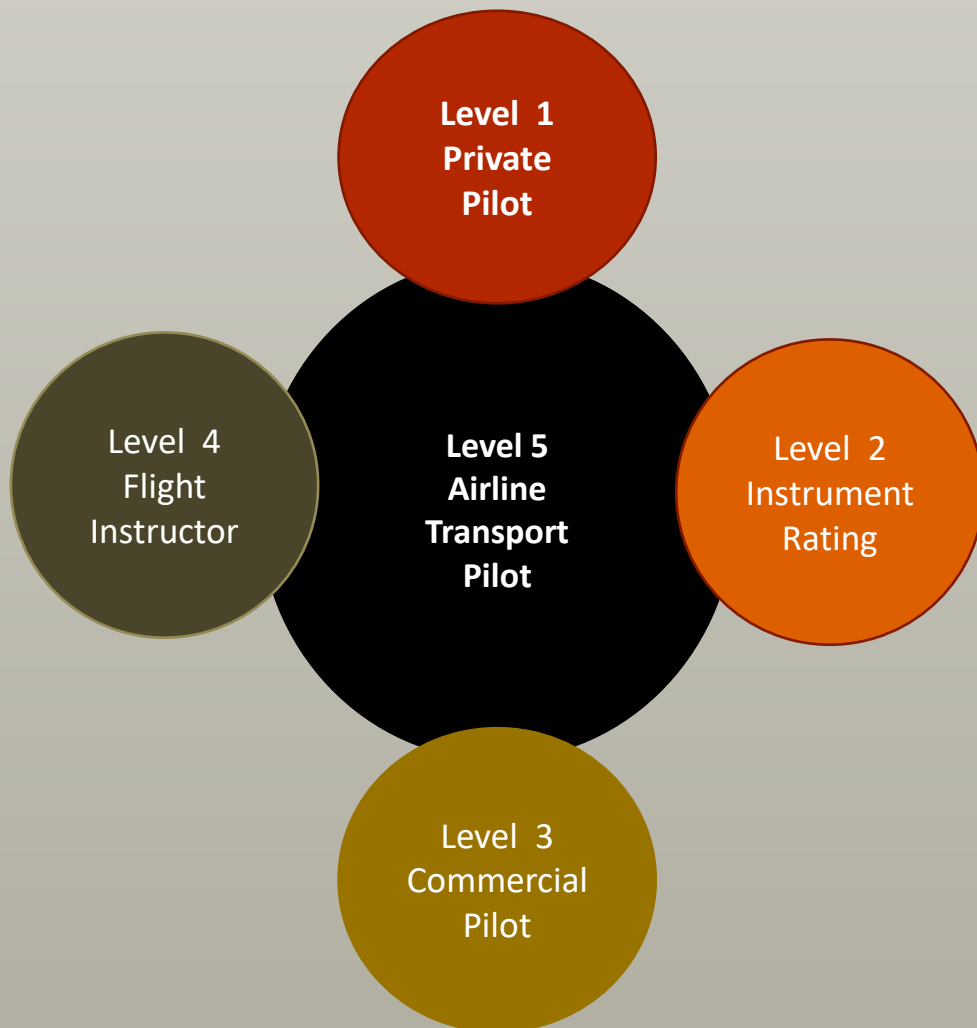
- O-5A/E0-5B/RC-7 Pilot
- Army Astronaut
- C-12 Pilot
- Fixed Wing Aviator (Aircraft Nonspecific)
- Jet Aircraft Pilot

## **SECTION III: FLIGHT TRAINING**

### **LEVELS OF TRAINING AND CERTIFICATES**

# SECTION III: LEVELS OF TRAINING AND CERTIFICATES

## CIRCLE OF SUCCESS-CIVIL AVIATION



# SECTION III: LEVELS OF TRAINING AND CERTIFICATES

## LEVEL 01: PRIVATE PILOT LICENSE (PPL)

The Private Pilot License is the most popular of FAA pilot certificate and also the first license in your pathway to a flying career. This license allows pilots to fly airplanes in day and night VFR (visual flight) conditions. With a Private Pilot Certificate, you may not fly people or property for compensation or hire, however you can take passengers flying and split costs among yourself and your passengers. The FAA requires a minimum of 40 hours flight time to be eligible for the Private Pilot License. The industry average is currently around 65-70 flight hours.

FAR	ELIGIBILITY	REQUIREMENTS
Part 61.103	<ul style="list-style-type: none"> <li>• Be at least 16 years of age to training. (Cannot apply for certificate until 17.)</li> <li>• Be able to read, speak, write, and understand English.</li> <li>• Must obtain a Student Pilot Certificate.</li> <li>• Must obtain a 3rd Class Medical Certificate</li> </ul>	<p>Conduct FAA Written Exam</p> <p>Receive flight training and ground training that is logged with a Certified Flight Instructor (CFI).</p> <p>Meet aeronautical experience requirements:</p> <ul style="list-style-type: none"> <li>• 40 Hrs. of total time: (closer to 65)</li> <li>• 20 hrs. must be dual received</li> <li>• 10 hrs. solo flight training</li> <li>• 10 hrs. solo flight time</li> <li>• 5 hrs. of solo cross country</li> <li>• 3 hrs. cross country training</li> <li>• 3 hrs. of instrument training</li> <li>• 3 hrs. of night training</li> <li>• 3 hrs. check ride prep</li> </ul> <p>Pass practical test to ACS standards. (Check Dile)</p>

# SECTION III: LEVELS OF TRAINING AND CERTIFICATES

## LEVEL 02: INSTRUMENT RATING (IFR)

An instrument rating allows a pilot to fly in IMC (instrument meteorological conditions) under IFR (instrument flight rules). An instrument rating adds a high level of precision to a pilot's flying skills and Aeronautical Decision Making. To be eligible for the instrument rating, A pilot must log a minimum of 50 hours PIC cross country time, receive 40 hours of flight time in actual or simulated instrument conditions, and receive applicable endorsements from a Certified Flight Instructor

FAR	ELIGIBILITY	REQUIREMENTS
Part 61.65	<ul style="list-style-type: none"><li>Must possess a current Private Pilot Certificate</li></ul>	<p>Conduct FAA Written Exam</p> <p>Receive flight training and ground training that is logged with a Certified Flight Instructor (CFI-I).</p> <p>Meet aeronautical experience requirements: 40 Hrs. total time. (All time must be simulated or actual instrument conditions) 50 hrs. of cross country (carried over from private pilot)</p> <p>Pass practical test to ACS standards. (Check Ride)</p>

# SECTION III: LEVELS OF TRAINING AND CERTIFICATES

## LEVEL 03: COMMERCIAL PILOT LICENSE (CPL)

The FAA Commercial Pilot License is the key to earning compensation. In this phase of training, students will learn what it truly means to be a professional pilot and hone their abilities to be proficient in both aeronautical knowledge and their practical skills while learning the applicable laws while operating as a pilot for hire.

FAR	ELIGIBILITY	REQUIREMENTS
Part 61.123	<ul style="list-style-type: none"><li>• Must possess a current Private Pilot Certificate</li><li>• Must be at least 18 years of age</li><li>• Must obtain a 2nd class medical certificate</li></ul>	<p>Conduct FAA Written Exam</p> <p>Receive flight training and ground training that is logged with a Certified Flight Instructor (CFI).</p> <p>Meet aeronautical experience requirements: Total Time 250 hrs. 100 hrs. of PIC in powered aircraft. 50 hrs. of cross country. 10 hrs. of instrument training. 10 hrs. of Complex time or Technically Advanced aircraft.</p> <p>Pass practical test to ACS standards. (Check Ride)</p>

# SECTION III: LEVELS OF TRAINING AND CERTIFICATES

## LEVEL 04: CERTIFIED FLIGHT INSTRUCTOR (CFI)

A Certificated Flight Instructor is a person who holds a flight instructor certificate and is authorized to give training and endorsements.

FAR	ELIGIBILITY	REQUIREMENTS
Part 61.183	<ul style="list-style-type: none"><li>• Must be 18 years of age.</li><li>• Must hold either a Commercial Pilot certificate or Airline Transport Pilot certificate with the category and class for the plane they wish to instruct in.</li><li>• Must be at least 18 years of age</li><li>• Must obtain a 3rd class medical certificate</li></ul>	<p>Conduct and pass both FAA written exams</p> <p>Receive ground and flight training with an instructor:</p> <p>No flight specified flight hr. requirement. Must display proficiency in areas of operation listed under 61.187 in the FAR AIM.</p> <p>Receive a spin endorsement.</p> <p>Pass practical test PTS standards. (Check Ride)</p>

# SECTION III: LEVELS OF TRAINING AND CERTIFICATES

## LEVEL 05: AIRLINE TRANSPORT PILOT (ATP)

The highest certification issued by the FAA. Think of an ATP like a PhD level of education in aeronautics, aviation law, physiology, aeromedical factors, meteorology, and aerodynamics

FAR	ELIGIBILITY	REQUIREMENTS
Part 61.153	<ul style="list-style-type: none"><li>• Must be 23 years of age.</li><li>• Be of good moral character.</li><li>• Hold a Commercial Pilot certificate with an instrument rating or meet the Military training requirements.</li><li>• Have at least 1500 hrs. total time.</li><li>• Must obtain a 1st class medical certificate.</li></ul>	<p>Pass FAA exam</p> <p>Receive an Aircraft type rating.</p> <p>Receive and log training in the aeronautical knowledge required under 61.155.</p> <p>Receive and log training 61.156., to meet the hr. requirements: 30 Hrs. of classroom instruction 10 Hrs. of FSTD Training (SIM)</p> <p>Must be completed in a qualified simulator approved by the FAA.</p>



## **SECTION IV: TOUR OF AIRPORT**

**CARGILL AERONAUTICAL**



## GETTING STARTED

**MEET THE DIRECTOR**

**GOALS, EXPECTATIONS AND TOUR**

**INTRO TO FLYING**

**SCHEDULE A DISCOVERY FLIGHT & REVIEW PROCESS**

**ENROLLMENT**

**COMPLETE AND SUBMIT APPLICATION DOCUMENTS**

**BEGIN TRAINING**

**SCHEDULE FIRST LESSON & MEET INSTRUCTOR**



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