

# Careers in aviation



Grades 6-8 | Activity Option 2 | ⌚ 55 minutes

Kids will create an infomercial just for fun to highlight important aspects of aviation careers.

## Step 1 (5 minutes)

Share that students will create an infomercial just for fun to highlight important aspects of aviation careers.

## Step 2 (10 minutes)

Ask/share with them more about the terms and definitions below:

- **Pilot** – safely flies the plane; typically a flight has two pilots: the captain, who is in charge, and the co-pilot, who is called the first officer
- **Flight attendant** – instructs passengers on safety, serves meals/snacks and helps passengers feel comfortable during the flight
- **Ramp service agent** – ensures that your luggage arrives with you by loading luggage on the right plane and unloading luggage when the plane arrives
- **Ground marshal** – safely guides a landed plane to where passengers and/or cargo can be loaded or unloaded
- **Aircraft mechanic** – repairs and maintains the aircraft to ensure it is safe to fly
- **Customer service representative** – helps passengers get their tickets, receives their luggage and answers questions to make sure passengers have a good experience while traveling
- **Food service representative** – helps prepare meals and snacks, and stocks the food and drinks served on flights

## Materials



Pencils/pens



Paper



Career fact sheets



Student handout

- **Air traffic controller** – monitors and controls air traffic by making sure planes keep a safe distance from one another
- **Flight dispatcher** – assists the pilot in planning the flight paths, monitors the flight and advises the pilot if conditions or paths change during the flight
- **Meteorologist** – studies the atmosphere to observe and predict weather patterns, which is used to identify the safest route to fly the airplane

### Step 3 (15 minutes)

Tell the students that they will create a fun, two-minute infomercial about the importance of two of the roles, above. Students will work on writing their script and then share it with family and friends.

- Have the students choose two career roles from the **career fact sheets**. Provide the students with a copy of both **student handouts** to help them with the activity.
- Encourage the students to be funny and satirical, but keep it school-appropriate (optional)
  - **Satire** – the use of humor, irony, exaggeration and/or sarcasm to tell a story

#### Encourage the students to consider:

- Why is each role important for the flight?
- What might be the most challenging thing about each role?
- What might be the most exciting thing about each role?
- How each of their roles might impact the work of the other?

### Step 4 (20 minutes)

The students will present their infomercials. Use a watch or timer to help keep the presentations within two minutes. Then they can record the infomercial to share with family and friends. Encourage the students to be creative!

### Step 5 (5 minutes)

- Thank the students for a GREAT job!
- Let them know how much you enjoyed being with them.

## Student handout 1 - notes

Career role #1: \_\_\_\_\_

List 3 key responsibilities they have:

1) \_\_\_\_\_

2) \_\_\_\_\_

3) \_\_\_\_\_

Why is this role important? \_\_\_\_\_

\_\_\_\_\_

What type of education and/or interests do you need for this role? \_\_\_\_\_

What is the most challenging thing about this role? \_\_\_\_\_

\_\_\_\_\_

What is the most exciting thing about this role? \_\_\_\_\_

\_\_\_\_\_

Career role #2: \_\_\_\_\_

List 3 key responsibilities they have:

1) \_\_\_\_\_

2) \_\_\_\_\_

3) \_\_\_\_\_

Why is this role important? \_\_\_\_\_

\_\_\_\_\_

What type of education and/or interests do you need for this role? \_\_\_\_\_

\_\_\_\_\_

What is the most challenging thing about this role? \_\_\_\_\_

\_\_\_\_\_

What is the most exciting thing about this role? \_\_\_\_\_

\_\_\_\_\_

## Student handout 2 – script outline

Below is an example outline for your two-minute infomercial. Keep track of time.

**Remember:** The purpose of an infomercial is to “sell” people on what you are talking about.

Be enthusiastic, be funny and have fun! Satire is a great way to approach infomercials.

Outline	Example
<p><b>Lead in (15 Seconds)</b></p> <p>Get your audience’s attention.</p>	<p><i>“Do you love to travel? Are you looking for a career that takes you all over the world? Join the aviation industry! By becoming a flight attendant, or a pilot, you can visit all kinds of cool places!”</i></p>
<p><b>Information (90 seconds)</b></p> <p>Share the following information with the audience about EACH role:</p> <ul style="list-style-type: none"> <li>▪ Basic educational requirements, certifications, areas of study and/or interest areas</li> <li>▪ Three main responsibilities of that role</li> <li>▪ Most challenging part of the role</li> <li>▪ Most exciting part of the role</li> </ul>	<p><i>“If you love working with people, then you would make a great flight attendant!”</i></p> <p><i>“Flight attendants help to keep passengers safe, assist passengers with special needs and even direct passengers in case of an emergency.”</i></p> <p><i>“They sometimes have to work with difficult people...”</i></p> <p><i>“...but they also get to meet people from all over the world!”</i></p>
<p><b>Closing (15 seconds)</b></p>	<p><i>“Remember, if you love travel and want to see all kinds of cool places – you should check out a career as a flight attendant or pilot!”</i></p>

# Pilot

Airline pilots fly for airlines that transport people and cargo on a fixed schedule. Pilots may also fly aircraft for other reasons, such as private flights, rescue operations, firefighting or aerial photography.

## Typical responsibilities include:

- Checking the overall condition of the aircraft including making sure the fuel supply is adequate and weather conditions are acceptable.
- Communicating with air traffic control and dispatch using the aircraft's radio system and submitting flight plans to air traffic control.
- Operating and controlling aircraft along planned routes, and during takeoffs and landings.
- Monitoring engines, fuel consumption, and other aircraft systems during flight and responding to any changes, such as weather.
- Navigating the aircraft by using cockpit instruments and visual references.

Many aircraft use two pilots. The most experienced pilot, the captain, supervises all other crew members and has primary responsibility for the flight. The co-pilot, or first officer, shares flight duties with the captain.

Airline pilots typically need a bachelor's degree in any subject, along with a commercial pilot's license and an Airline Transport Pilot (ATP) certificate from the Federal Aviation Administration (FAA). Newly hired pilots at regional airlines usually have about 2,000 hours of flight experience, whereas newly hired pilots at major airlines have about 4,000 hours of flight experience.



## Important skills

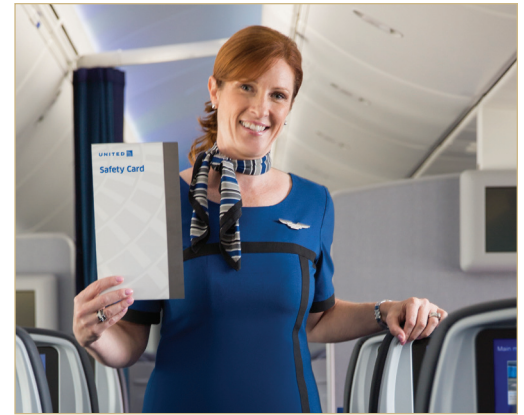
- **Communication skills.** Pilots must speak clearly when conveying information to air traffic controllers.
- They must also listen carefully for instructions.
- **Observational skills.** Pilots must regularly watch over screens, gauges and dials to make sure that all systems are in working order. They also need to maintain situational awareness by looking for other aircraft or obstacles.
- **Problem-solving skills.** Pilots must be able to identify complex problems and figure out appropriate solutions.
- **Quick reaction time.** Pilots must be able to respond quickly and with good judgment to any impending danger, because warning signals can appear with no notice.

# Flight attendant

The primary job of flight attendants is to keep passengers safe and to ensure that everyone follows security regulations. Flight attendants also try to make flights comfortable and enjoyable for passengers.

## Typical responsibilities include:

- Ensuring that adequate supplies of refreshments and emergency equipment are on board.
- Demonstrating the use of safety and emergency equipment.
- Making sure all passengers have seatbelts fastened and ensuring other safety requirements are met.
- Serving and selling beverages, meals or snacks.
- Taking care of passengers' needs, particularly those with special needs.
- Reassuring passengers during flight, such as when the aircraft hits turbulence.
- Administering first aid to passengers or coordinating first aid efforts, when needed.
- Directing passengers in case of emergency.



A flight attendant's most important responsibility is to help passengers in the event of an emergency. This responsibility ranges from dealing with unruly passengers to performing first aid, fighting fires and directing evacuations. Most airlines only require a high school diploma, while a few require some secondary schooling. There is a 3-6 week training period in which flight attendants learn first aid, safety, emergency preparedness, federal regulations and flight procedures.

## Important skills

- **Attentiveness.** Flight attendants must be aware of passengers' needs to ensure a pleasant travel experience. They must also be aware of any security or safety risks.
- **Communication skills.** Flight attendants should speak clearly, listen attentively and interact comfortably with passengers and other crew members.
- **Customer service skills.** Flight attendants should have poise, tact and resourcefulness to handle stressful situations and meet passengers' needs.
- **Decision-making skills.** Flight attendants must be able to act decisively in emergency situations.

# Ramp service agent

Ramp service agents (also called baggage handlers) load and unload baggage, air mail and cargo shipments. They operate baggage carts, conveyors, forklifts and other baggage and air freight handling equipment. They also transfer cargo (including luggage) to other gates, other airlines and to passengers.

## Typical responsibilities include:

- Handling, sorting and transferring customer baggage, air freight and company materials in a courteous, prompt, accurate and careful manner.
- Maintaining equipment and performing equipment checks.
- Complying with all safety procedures and airline policies.
- Servicing aircraft as needed (e.g. window washing and de-icing).
- Assisting in ramp set-up and storage of equipment and baggage.
- Constantly communicating with flight crew personnel and other ground personnel.

Ramp service agents may lift heavy luggage, mail sacks, and fasten freight under pressure and tight timing. They load materials into the baggage compartments (or belly) of the aircraft. Almost all work is done outdoors. These employees work on arriving and departing aircraft, which provides a varying work schedule in accordance to airlines' flight schedules.

With airlines moving thousands of bags every day, things do occasionally get misdirected. Some ramp service agents deal directly with customer complaints about lost luggage and help trace the missing bags. These workers are called "baggage agents." Baggage agents may begin their career on the ramp or in some other area of customer relations with an airline.

A high school diploma is usually preferred by employers, and training is done on the job.



## Important skills

- **Time management skills.** Ramp service agents must work efficiently to complete all the necessary assigned tasks so that the plane can depart on time.
- **Attention to detail.** Ramp service agents cannot cut corners and must remain alert and diligent, as the safety of the aircraft workers and the plane passengers should be their top priority at all times.
- **Adaptive to change.** Ramp service agents must be able to observe an issue with the aircraft, which requires knowledge about all the various models that come in and how to address the problems for those aircrafts.



# Ground marshal

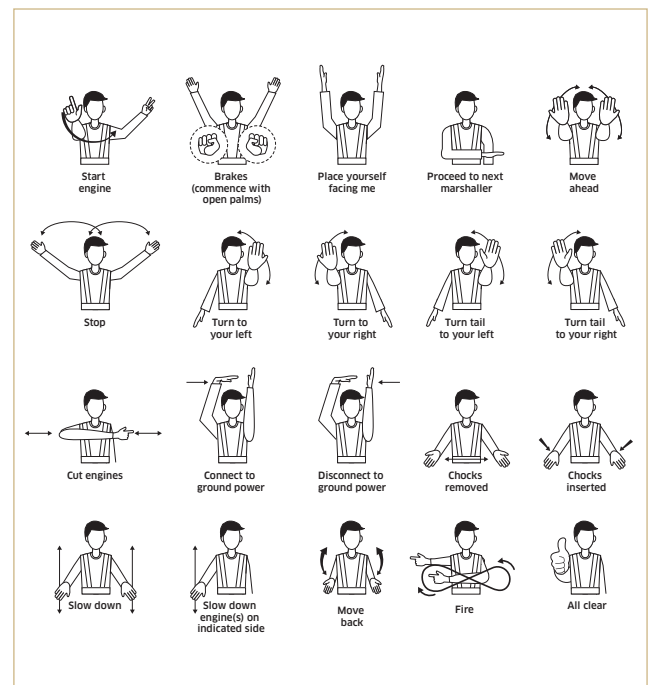
At airports, the ground marshal signals the pilot to keep turning, slow down, stop and shut down engines, leading the aircraft to where it will be parked or to the runway. Marshalling is important because many pilots have a limited vision of the aircraft and ground obstacles from the cockpit. Ground marshallers, also called aircraft marshallers, have to ensure the surrounding area is clear for aircraft and safety is their main priority.



## Typical responsibilities include:

- Marshalling aircraft to the final stop at the gate or the runway.
- Being in constant contact with air traffic control and communicating all associated movements.
- Coordinating with ground operations control regarding where the aircraft should go.
- Ensuring safe behavior on the aircraft apron or Ramp Areas is maintained at all times.

Aircraft marshalling is visual signaling between ground personnel and pilots on an airport, aircraft carrier or helipad. Marshalling is one-on-one visual communication and a part of aircraft ground handling. It may be as an alternative to, or additional to, radio communications between the aircraft and air traffic control. The usual equipment of a marshaller is a reflecting safety vest, a helmet with acoustic earmuffs, and gloves or marshaling wands, which are handheld illuminated beacons.



Ground marshallers work closely with the pilot to make sure the aircraft's weight/cargo is balanced and fuel and other mechanical aspects are ready for the next journey.

## Important skills

- **Communication skills.** Ground marshallers must verbally communicate and be able to use signals to communicate with their pilots and wing walkers, who help them see the aircraft from 360 degrees.
- **Attention to detail.** Marshallers must be able to inspect the plane for possible damage and ensure that all problems are addressed before the plane takes off for its next destination.
- **Decision-making skills.** Ground marshallers need to be able to make decisions quickly, as there is not much supervision on the job and each person must work quickly to ensure departure is on time.



# Aircraft mechanic

An aircraft mechanic is someone who repairs and performs scheduled maintenance on airplanes. They also inspect airplanes as required by federal agencies.

## Typical responsibilities include:

- Examining aircraft and parts for defects.
- Diagnosing primarily mechanical problems.
- Measuring parts for wear using precision instruments and testing aircraft parts with gauges and other diagnostic equipment.
- Repairing wings, brakes and other aircraft components.
- Performing disassembly, repair, cleaning, adjustment, assembly, testing and calibration of aircraft components.
- Inspecting completed work to ensure that it meets performance standards.
- Keeping records of maintenance and repair work.

Aircraft mechanics are essential to ensure the inspection, fixing and maintenance parts of the aircraft are to the highest standards, as airplanes are highly complex machines that require reliable parts and service to fly safely. They conduct detailed inspections between take-offs and landings and record details such as the amount of hours an aircraft has been in flight, number of days since the last inspection, operation cycles and various other aspects.

Most aircraft mechanics who work on civilian aircraft learn their trade in a federally approved training program. Mechanics that have this certification are authorized to work on any part of the aircraft except electronic flight instruments, which is the job of avionics technicians.



## Important skills

- **Mechanical ability.** Aircraft mechanics must be able to visualize how things are put together.
- **Attention to detail.** Mechanics must closely follow maintenance manuals to make sure they are working step by step.
- **Decision-making skills.** Mechanics must identify things to be fixed and work with the right tools to address the problem.

# Customer service rep

Customer service representatives are also called ticketing/gate agents. They are responsible for staffing the ticket counter, boarding gates and baggage service areas of the airport. They are an important part of an airline, as they directly engage with customers and help to establish a professional, positive experience for them at both the airline ticket counters and the boarding gates. They are generally the first people to greet customers and assist them with their ticketing and baggage check-in.



## Typical responsibilities include:

- Receiving and directing incoming calls, greeting and directing customers, tagging and handling baggage.
- Preparing tickets, determining fares and routing to assure passengers' travel needs are met.
- Managing all aspects of the ticketing process to ensure customers have the necessary documentation for travel.

When an airline experiences flight cancellations due to inclement weather or aircraft mechanical issues, a customer service representative's job can become hectic. They might be charged with finding accommodations, meals and transportation for passengers of canceled flights and then rebooking them for new flights. Customer service representatives should be skilled in dealing with distressed or irate customers.

Many customer service jobs are entry-level positions, making them a great way to break into the airline business. The minimum educational level is high school for some airlines, while others may prefer some post-secondary education.

## Important skills

- **Attentiveness.** Customer service representatives must ensure that travelers are flying with the correct documents, especially if traveling internationally.
- **Communication skills.** Customer service representatives must continually communicate with flight operations (ramp, mechanics, flight crew and each other) as needed to ensure safe and on-time departure.
- **Customer service skills.** Customer service representatives provide excellent customer service by assisting customers through their entire journey, from checking in until they leave the gate to get on the aircraft, answering any questions in a polite and helpful manner.

# Food service rep

Food service representatives work directly for an airline or a catering company contracted to prepare and deliver food to planes prior to take-off.

The airline caterer works with the airline operations representative to plan the menus for each flight. The airline caterer often delivers meals that are frozen and can be heated in the plane's warming ovens. Short flights may require cold meals that are placed in coolers. The meals are delivered to the plane on a schedule to provide the airline with time to store the food and serve it to the passengers. Airline caterers must be flexible to adapt to changing airline schedules, weather events and other timing obstacles.

Caterers usually produce alternative meals for passengers with restrictive diets. These must usually be ordered in advance, sometimes when buying the ticket. Some of the more common examples include:

- Cultural diets, such as French, Italian, Chinese, Japanese or Indian food.
- Medical diets, including low/high fiber, low fat/cholesterol, diabetic, peanut free, non-lactose, low salt/sodium, low-calorie, bland (non-spicy) and gluten-free meals.
- Religious diets, including kosher, halal, and Hindu, Buddhist and Jain vegetarian (sometimes termed Asian vegetarian) meals.
- Vegetarian and vegan meals, as well as infant and baby meals.

Food service representatives are required to have a high school diploma and some are required to have a college education. Training is done on the job.



## Important skills

- **Attention to detail.** Food service representatives must follow instructions and specifications to ensure food and beverages are in order and correctly prepared for the flight.
- **Mathematical skills.** Food service representatives must calculate exactly how much food/beverage and any other items to pack on each flight.
- **Communication skills.** Food service representatives interact with flight attendants to make sure the plane is stocked and ready to go on time.

# Air traffic controller

Air traffic controllers coordinate the movement of air traffic to ensure that aircraft stay safe distances apart. Air traffic controllers' primary concern is safety, but they also must direct aircraft efficiently to minimize delays.

## Typical responsibilities include:

- Monitoring and directing the movement of aircraft on the ground and in the air, using radar, computers or visual references.
- Managing communications by transferring control of departing flights to traffic control centers and accepting control of arriving flights.
- Providing information to pilots, such as landing and takeoff instructions, weather updates, runway closures and other critical information.

Most air traffic controllers have a combination of 2-4 years of post-secondary education and experience, and are required to pass training and tests administered by the Federal Aviation Administration (FAA).

Tower controllers direct the movement of vehicles on runways and taxiways, check flight plans, give pilots clearance for takeoff or landing, and direct the movement of aircraft and other traffic on the runways and other parts of the airport. Most work is done from the control towers.

Approach and departure controllers ensure that aircraft traveling within an airport's airspace maintain minimum separation for safety. They give clearances to enter controlled airspace and hand off control of aircraft to en route controllers.

En route controllers monitor aircraft once they leave an airport's airspace. They work at air route traffic control centers located throughout the country, typically not located at airports.

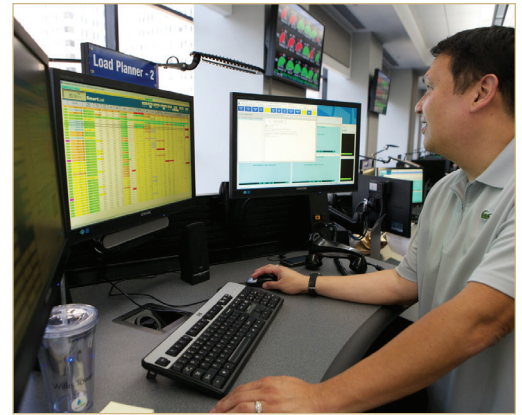


## Important skills

- **Multi-tasking skills.** An air traffic controller must be able to read instruments and radar screens, transmit and receive radio communications. It's like rubbing your stomach and patting your head at the same time.
- **Decision making under pressure.** Controllers must be quick to process information and advise aircraft on the ground and in the air. Delayed decisions potentially bring conflicting aircraft dangerously close together.
- **Excellent memory.** Air traffic controllers must handle a multitude of tasks simultaneously, such as knowing the distance, altitude, trajectory and speed of the many aircrafts they are controlling.

# Flight dispatcher

A flight dispatcher (also known as an aircraft dispatcher, airline dispatcher, flight follower or flight operations officer) assists in planning flight paths and planning fuel needs. They take into account wind direction and speed, weather, storms, aircraft performance and loading, landing conditions at destination airports, and other conditions. They usually work in the operations or control center of the airline.



Flight dispatchers in the United States are legally 50 percent responsible for the safety of every flight they dispatch. The pilot in command of the flight holds responsibility for the other 50 percent. A flight dispatcher has the legal authority to refuse to dispatch a flight if safety is in any way in question, as does the pilot in command (the captain).

## Typical responsibilities include:

- Assessing multiple variables to ensure a safe take off, in-flight experience and landing.
- Working up a flight path that the pilot either signs or modifies; this is considered a contract between both parties once approved.
- Visually monitoring flights for which they are responsible via a feed from air-traffic control.

Dispatchers must complete a FAA (Federal Aviation Administration) certification program provided either through a college or dedicated aeronautics school. The certification process involves meteorology, aerodynamics, flight planning, fuel planning, radio communications, emergency planning, airport operations knowledge, aircraft systems and Federal Aviation Regulations (FARs). Dispatchers must complete an abbreviated form of the Airline Transport Pilot (ATP) exam, and must successfully pass a practical exam administered by a FAA Certified Dispatch Examiner.

## Important skills

- **Decision-making skills.** A flight dispatcher must make critical, safety of flight decisions, often in a very fast-paced environment, considering multiple variables.
- **Good judgment skills.** A flight dispatcher must be able to understand multiple variables such as financial costs, customer impact, regulations and operational impact. This understanding is used to exercise operational control over flights while knowing their actions will impact hundreds of lives.
- **Communication skills.** A great deal of a flight dispatcher's day is spent in verbal and written communication with pilots, operations center co-workers, air traffic control specialists and meteorologists around the world.



# Aviation meteorologist

Aviation meteorologists play an important role in helping pilots navigate the complexity of our atmosphere. Aviation meteorologists (along with air traffic controllers and flight dispatch) work around the clock to make sure pilots can get to their destination as safely and as smoothly as possible. Meteorologists study weather patterns and use sophisticated models to forecast the weather.



## Typical responsibilities include:

- Collecting data from satellite images, radar, remote sensors and weather stations worldwide.
- Measuring factors such as air pressure, temperature and humidity.
- Applying physical and mathematical relationships and sophisticated computer models to make short and long-range weather forecasts.
- Analyzing all the scheduled flights and different airports that their airline services to identify any potential issues, updating the pilot directly or sending the information to flight dispatch.

Some aviation meteorologists work for airlines and others work for private companies or even for the government. They provide the day-to-day, hour-to-hour observations, analyses, forecasts, warnings and advice to pilots, airport operators and airlines. Meteorologists report weather conditions expected at airports, current conditions and flight forecasts using weather forecasting models from the National Weather Service and analyzing it against their own data.

The basic requirement for becoming a meteorologist is a four-year Bachelor of Science degree in meteorology or a closely related field. Bachelor's degree programs in meteorology provide a strong background in essential math and science knowledge, with concentration areas in atmospheric sciences and climatology.

## Important skills

- **Problem-solving skills.** Aviation meteorologists must have analytical and interpretive skills, with the ability to do precise and methodical work.
- **Communication skills.** Aviation meteorologists must convert complex natural science data into language that can be understood by pilots and the rest of the airline.
- **Quick work ethic.** Aviation meteorologists must work quickly using math and statistics to hand over important information, especially in the case of weather emergencies.