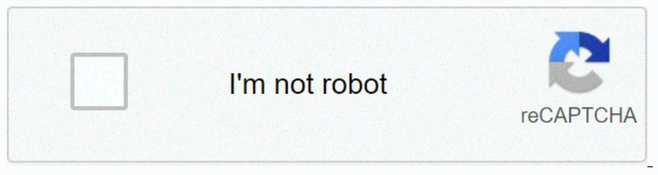

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Aviation merit badge answers

January 2014 As follows: Define aircraft. Describe some of the crowds and uses of aircraft today. Explain the operation of the piston, turboprop engine and jet engines. In a model aircraft, indicate the forces that operate on the aircraft in flight. Explain how airfoil produces lifts, how primary steering surfaces (ailerons, elevators, and rudder) affect the airplane's attitude, and how the propeller generates thrust. Show how the plane's control surfaces are used for takeoff, direct takeoff, level turn, climbing turn, descending turn, direct landing and landing. Please explain the following: sports pilot, recreational pilot and private pilot licences; the classification of the meter. Do two of the following: Take a flight by plane with the parent's permission. Record the date, location, aircraft type and flight duration and report flight impressions. Under surveillance, carry out a pre-flight inspection of the light aircraft. Get and learn to read the aviation map. Measure the actual course in the chart. Correct magnetic variation, compass deviation, and wind drift to determine the direction of the compass. Using one of the many flight simulator software packages available for PCs, fly the course and direction you've created in requirement 2c or another course you've drawn. Explain the purposes and functions of the different instruments in a typical single-engine air start: attitude indicator, direction indicator, altimeter, air speed indicator, turn and bank indicator, vertical speedometer, compass, navigation (GPS and VOR) and communication radios, rpm meter, oil pressure gauge and oil temperature gauge. Create the original poster from the aircraft instrument panel. Include and identify the equipment and radios discussed in requirement 2e. Do one of the following: Build and fly a fuel-powered or battery-powered electric model aircraft. Describe the safety rules for the construction and flying of model aircraft. Tell us the safety rules for the use of glue, paint, drugs, plastic, fuel and batteries. Build model FPG-9 (Foam Plate Glider). Get others on a team or patrol to make your own model, and then have a competition to test the accuracy of the models' flight and landing. Do one of the following: Visit the airport. After the visit, report on how the facilities are used, how runways are numbered and how runways are defined as active. Visit the Federal Aviation Administration facility - the air traffic control tower, the terminal radar control facility, the air traffic control center, or the Flight Standards District Office. (The phone book is in U.S. government offices, the Department of Transportation, the Federal Aviation Administration. Call in advance.) Report the operation and your impressions of the facility. Visit the Aviation Museum or attend an air show. Report your impressions of the museum or about three career opportunities in the aviation industry. Select one and find out the training and experience required for this profession. Discuss this with your instructor and explain why you might be interested in this profession. Aviation Worksheet FPG-9 Instructions Comments: April 30, 2013 - zacharyit very confusing way the screen says itMar 20, 2016 - Gary J clewsIs there video explaining aerodynamics I could show in the classroom scouts? April 08, 2016 - Chi NguyenTry this video for The Aerodynamics of Flight atwww.youtube.com/watch?v=5ltjFEei3AIAug 13, 2017 - Kim JurgensAs pilot and eagle scout we always strive to help young scouts learn about aviation. You can contact the nearest eaa, an experimental aircraft association, and they will help you not only with your basic requirements, but also to give you a flight with our Young Eagles program. Visit EAA.com and see the location of your chapter. May 01, 2018 - Anthony Does this for help and is there anything else I can be directed to so I can get the appropriate learning stuff so I can teach younger Scouts decent habits so they can learn how to fly a plane. December 11, 2019 - kieran baldwinthank for putting this site up Contest - Ask a Question - Add ContentT's site is not officially associated with Boy Scouts of America Follow Me, Scouts Interactive Online Merit Badges is open to all Scouts on any council. We also welcome 11-17 young people interested in scouting to class. This class is taught with a LIVE instructor and the class is interactive. Make sure that you have been in contact with your Scouts or unit manager prior to your participation in this and all other merit award hours regarding your intention to complete the Merit Badge. Download workbook: Click Read description here before signing up. EPIC Difference: In classes taught by registered Merit Badge Advisors who are experts in their field, all Merit Badge Advisors have a current dedicated support team for YPT certification, providing quick answers before, during, and after your class Class sizes are limited to 20 scouts to support an engaging and interactive learning environment and allow each scout to demonstrate the fulfilment of each requirement Class preparation scouts are expected to come to prepared requirements to the best of their ability. Positive scouting focus and attitude! You need a laptop or desktop computer, high-speed Internet connections, a webcam and a microphone to participate in a live online category. The day before class, we send a ZOOM link to the email address you registered. This e-mail message info@epicmeritbadges.com from the ZOOM test at least one day before the hour. Log in 10 minutes before scheduled hourly time. Classes start on time. Class A uniform used during this online merit badge Import into this Merit Badge, which can also contain a Merit Badge work book, which may include project work documentation that refers to your notes. The Merit Badge flyer is full of useful information and will help you successfully complete the requirements. It offers solutions and gives instructions on where to find the answers to earn this merit badge. If you don't receive brochures, you can also use online and other resources to meet the requirements if necessary. It's unacceptable to be unprepared. It is strongly recommended that you download this workbook and complete it before the category. It makes it much easier to follow the Scout during the course and ensures that all the requirements are met. We will send you a digital blue card once you have completed all the requirements. However, the blue card will not be ready until it has been snown by the head of unit. We recommend getting approval for the course. When we send you a blue card, give it to your unit manager for final signatures - digital or ink? It's up to the head of your unit. ·If you don't meet all your requirements, you will be given an incomplete or partial blue card and have until your 18th birthday to meet all the requirements. We recommend that you meet the requirements sooner rather than later. We will support you until the requirements are ready. This part is the responsibility of the Scout. Here are some sample responses from Posted by Troop 107 Greensboro NC 1 Aviation Merit Badge 2 Aviation MB RequirementsDo as follows: Define aircraft. Describe some of the crowds and uses of aircraft today. Explain the operation of the piston, turboprop engine and jet engines. In a model aircraft, indicate the forces that operate on the aircraft in flight. Explain how airfoil produces lifts, how primary steering surfaces (ailerons, elevators, and rudder) affect the airplane's attitude, and how the propeller generates thrust. Show how the plane's control surfaces are used for takeoff, direct takeoff, level turn, climbing turn, descending turn, direct landing and landing. Please explain the following: sports pilot, recreational pilot and private pilot licences; the classification of the meter. 3 Aviation MB RequirementsDo TWO of the following: Take a flight by plane with the permission of a parent. Record the date, location, aircraft type and flight duration and report flight impressions. Under supervision, carry out a pre-inspection of the light aircraft. Get and learn to read the aviation map. Measure the actual course in the chart. Correct it for magnetic variation, compass deviation and wind drift to determine the direction of the compass. Using one of the many flight simulator software packages available for computers. fly the course and direction you have prepared in requirement 2c or another course you have drawn. Explain functions of different instruments on typical single-engined aircraft: attitude indicator, direction indicator, altimeter, air speed indicator, turn and bank indicator, vertical speedometer, compass, navigation (GPS and VOR) and communication radios, speedometer, oil pressure gauge and oil temperature gauge. Create the original poster from the aircraft instrument panel. Include and identify equipment and radios treated in requirement 2e. Build and fly a fuel-powered or battery-powered electric model aircraft. Describe the safety rules for the construction and flying of model aircraft Please describe the safety rules for the use of glue, paint, drug, plastic, fuel and battery pack. B. Build model FPG-9. Get others on a team or patrol to make your own model, and then have a competition to test the accuracy of the models' flight and landing. 5 Aviation MB RequirementsDo one of the following: Visit the airport. After the visit, report on how the facilities are used, how runways are numbered and how runways are defined as active. Visit the Air Traffic Control Tower, Terminal Radar Control, Air Traffic Control Center or Flight Standards District Office of the Federal Aviation Administration. (The phone book is in U.S. government offices, the Department of Transportation, the Federal Aviation Administration. Call in advance.) Report the operation and your impressions of the facility. Visit the Aviation Museum or attend an air show. Report your impressions of a museum or exhibition. 6 Aviation MB requirements About three career opportunities in the aviation industry. Select one and find out the training and experience required for this profession. Discuss this with your instructor and explain why you might be interested in this profession. 7 Requirement 1aa. Define the aircraft. Describe some of the crowds and uses of aircraft today. Explain the operation of the piston, turboprop engine and jet engines. 8 What is an aircraft Aircraft is a vehicle that can fly without support The two main types are lighter than aircraft and aircraft heavier Aircraft can also be propulsion and a powerless aircraft can also be manned or occupied 9 Requirement 1b bb. In a model aircraft, indicate the forces that operate on the aircraft in flight. 10 Flight is the result of the balance of these forces Forces on a plane flight are the result of the balance of these forces 11 How do you create an elevator? 12 Lighter than the airplane lift is generated by hot air or gases denser than air. 13 Aircraft heavierwings produce lift 14 requirement 1c c. Explain how airfoil produces lifts, how primary steering surfaces (ailerons, elevators, and rudder) affect the airplane's attitude, and how the propeller generates thrust. 15 How do wings produce LiftBernoulli principle 16 How to create thrust? 17 Unplanned aircraft Thrust 18 thrusts created by power plant Power plant Power plant 19 different power plant rots Prop engine Similar car engineThrust is produced with propeller 20 different power engine ts Jet Engines Thrust is produced with jet exhaust gases 21 types Powerful vi Turboprop engines Propeller and jet engine mixRust is mostly produced with propeller 22 Flow over surfaces Is Drag Created? Flow Over Surfaces 23 How do I control airplanes? 24 Troops operating aircraftlift THRUST Here is a photo of a U.S. Air Force F-16 helping to point out the main force operating on the aircraft. The lift is generated by the lower pressure created on the upper surface of the aircraft wing compared to the pressure on the lower surface of the wing, causing the wing to be lifted upwards. The specific shape of the aircraft wing (airfoil) is designed in such a way that the air flowing over it must travel faster, resulting in a lower pressure range (see figure) and thus lifting the wing upwards. The elevator is the force that resists gravity (or weight). Thrust is a force created by a power source that gives the aircraft forward. It can either pull or push the aircraft forward. Thrust is the force that beats pulling. Traditional aircraft use engines and propellers to gain thrust. A drag is a force that delays or slows down the forward movement of an aircraft in the air when the direction of airflow is in contrast to the direction of movement of the aircraft. It is without friction when it meets and passes from the aircraft and its components. The more the surface area is exposed to busy air, the greater the drag. The streamlined shape of the aircraft helps it wear through the air more easily. If a plane flies in a tailwind, i.e. a wind whose airflow also works in the same direction as the plane's direction of motion, pulling really helps to move the aircraft in the direction it wants to go. However, during take-offs and landings, aircraft usually fly into the wind. DRAG WEIGHT (gravity) 25 How does airfoil work? Bernoull's PrincipleDaniel Bernoulli, an 18th-century Swiss scientist, found that as the fluid's speed increases, its pressure drops. How and why does this work, and how does it affect planes on the fly? Bernoulli's principle is most easily reflected with the help of a venturi tube. The venturi tube is simply a tube that is narrower in the middle than at the ends. When the liquid passing through the tube reaches a narrow part, it speeds up. According to the Bernoulli principle, it should then exert less pressure. Let's see how this works. When the liquid passes over the middle of the tube, more energy is used as the molecules accelerate. This leaves less energy under pressure, So the pressure's dropping. One way to describe this drop in pressure is to call it a pressure difference. This simply means that the pressure at some point differs from the pressure of the second point. For this reason, the principle is sometimes referred to as the bernoulli difference in pressure. According to the Bernoulli principle, the increase in the speed of any liquid is always accompanied by driving pressure. The air is liquid. If you can make the air move quickly on one side of the surface, the pressure on one side of the surface is lower than on the other side of the surface. The Bernoulli principle works with the wing of the aircraft. In motion, the air hits the front edge (front edge) of the wing. Some of the air moves under the wing, and some goes over. Air moving at the top of the curved wing must travel further away to get behind the wing; therefore, it must travel faster than the air moving under the wing in order to reach the rear edge (rear edge) at the same time. Therefore, the air pressure at the top of the wing is lower than at the bottom of the wing. The Bernolli principle applies to any liquid, and since air is liquid, it applies to air. The beaker of the flight wing increases the speed of the air passing over the air foil. This leads to a decrease in pressure in the airflow moving in the air foil. This drop in pressure on the flight wing is causing an elevator. 26 How does surface management work? The steering surfaces are movable exteriors of the aircraft. These surfaces control the airflow over different parts of the aircraft, causing it to move in different ways. Inside the aircraft, pilots control the movement of surfaces with their hands or feet by pushing, pulling or turning controls to ensure that the aircraft moves in the right way. By learning the names and functions of different surfaces, you will appreciate the structure, design and aerodynamics of the aircraft. AEROPLANE An aeroplane is an air-heavy vehicle powered by an engine that passes through the reaction of air passing through its wings in the air. HULL The fuselage is the middle body part of the aircraft, which can accommodate crew and passengers or cargo. COCKPIT For general aviation aircraft, the cockpit is usually the pilot's and passengers' trunk space: in some aircraft it is only the pilot's compartment. LANDING GEAR The landing gear under the aircraft supports it while on the ground. WINGS Wings are aircraft parts that provide lift and support the weight of the entire aircraft and its contents during flight. PROPELLER The propeller is a rotating blade located at the front of the aircraft. The engine turns the propeller, which most often pulls the aircraft through the air. FLAPs are moving parts of the aircraft's wings Body. They are moved in the same direction (down) and allow the aircraft to fly more slowly. AILERONS Ailerons are the outward-moving parts of the aircraft's wings moving in opposite directions (one up, one down). They're used when turning. Rudder is the movable vertical part of the tail that controls lateral movement. HORIZONTAL STROKE The horizontal stroke is the horizontal surface of the rear part of the fuselac used to balance the aeroplane. ELEVATOR The lift is the moving horizontal part of the tail that causes the machine to move up and down. 27 Directional control YAW rudders PITCH - lifts ROLL - ailerons The aircraft changes direction according to movement from one or more of its three axis of rotation: the side axle, the vertical axis and the longitudinal axis. These axes are imaginary lines that pass perpendicular to each other through the exact weight center of the aircraft. The rotation of the aircraft around them is called pitch, roller and yawning. The pilot controls the aircraft by controlling pitch, roller and yawning, as well as using elevators, ailerons and rudder. YAW Rudder rotates the aircraft around the vertical axis. ROLL Ailerons rotates the aircraft around the longitudinal axis. PITCH Lifts rotate the aircraft around the side shaft. 28 YAW Rudder – The foot pedals are connected to the rear rudder using wires or hydraulics. The rudder is a vertical part of the tail that can move from side to side. Rudder: The foot pedals are connected by wires or hydraulics to the rudder of the tail section. The rudder is a vertical part of the tail that can move from side to side. When the foot pressure of the left rudder pedal moves the rudder to the left, the beak of the aircraft moves to the left. 29 ROLL The stick is connected by the cables or hydraulics of the wing ailerons. By turning the stick, the pilot can change the positions of the ailerons. When the steering wheel is turned to the right, the right aileron goes up and the left aileron goes down, rolling the aircraft to the right. When the steering wheel is turned left, the right aileron goes down and the left aileron rises, rolling the aircraft to the left. Ailerons – The stick is connected by the cables or hydraulics of the wing ailerons. By turning the stick, the pilot can change the positions of the ailerons. 30 PITCH lifts – The joy stick is connected by wires or hydraulics to the lifts on the hen part. By moving the stick, the pilot can change the position of the elevators. The joy stick is connected by wires or hydraulics to the lifts on the hen part. By moving the stick, the pilot can change the position of the elevators. When the steering column is pushed in, the lifts move down and push the plane's back Beak down, rolling down the plane. As you pull the steering column backwards, the lifts move upwards, lowering the plane's rear and nose up, rolling the aircraft upwards. Cars only go left or right, but planes must also be steered up or down. The wings and the back of the aircraft have parts called steering surfaces to help it. These can be demonstrated by using folded paper connections and balasal connections. Let's start with an experiment that illustrates how to control the machine. 31 Requirement 1dd d. Show how the plane's control surfaces are used for takeoff, direct takeoff, level turn, climbing turn, descending turn, direct landing and landing. 32 Take-off & take-off After taxiing to the runway, a pre-take-off checklist has been made. The inspection shall ensure that all systems operate normally. When this is complete, the aircraft will be rolled into the middle of the runway and aligned with it. The throttle lever is fully opened to start the ascent (also called the rise roller). During this take-off, the steering wheel, or stick, is usually held in a neutral position, but the rudder pedals are used to keep the aircraft on the middle line of the runway. When the take-off air is approached, the gentle back pressure of the steering wheel lifts the lift, causing the nose of the aircraft to rise slightly upwards. This lifts the cam wheel off the runway. When the cam wheel is off the runway, the right rudder shall be used to combat the left-turn alignment of low air velocity and high power flight conditions. When a plane lifts loved ones on a runway, the pilot varies depending on the pressure on the steering wheel. First of all, the pressure is slightly reduced to obtain an air baby while it is still on the ground effect (an additional lift caused by compression of air between the wings of the aircraft and the ground). When the flight speed rises to the best rate of take-off, the back pressure of the steering wheel shall be adjusted so that the air velocity is maintained until the first desired height is reached. (The best rate of rise air speed provides the most height for the unit of time.) Take-offs to other and higher heights shall be made with flight buttons specified by the pilot until the desired travel flight height is reached. Once it reaches the travel altitude, the aircraft's pitch attitude decreases and the aircraft accelerates to the speed of the flight. The power is reduced and adjusted to maintain the selected travel speed. Almost simultaneously, the pilot adjusts the lift and possibly the rudder to keep the aircraft at the desired altitude and direction (direction). If the flight goes to a distant airport, the aircraft is kept in its travel flight configuration until the destination is near. If a pilot only wants to perform basic flight movements in the training area, the travel flight configuration may change fairly soon. 33 Landing A good landing begins That's a good approach. Before starting the final approach, the pilot performs a landing checklist to ensure that critical items such as fuel flow, landing craft down and carburetor heat are not forgotten. Flaps are used in most landings because they allow a lower approach speed and a steeper landing angle. This gives the pilot a better idea of the landing zone. The airspeed and landing speed have stabilized, and the aircraft will be aligned with the runway's centerline when the final approach begins. When an aeroplane lands over the runway approach end (threshold), power is further reduced (probably idling). Currently, the pilot slows down the landing and flight speed by gradually applying more back pressure to the steering wheel. The aircraft is kept in line with the centre of the runway mainly with the help of a rudder. Continuing the back pressure of the steering wheel as the aircraft enters the ground effect and comes closer to the runway and closer to the runway further slows down the speed of its forwards and the rate of landing. The pilot's goal is to keep the aircraft safely flying just a few inches above the runway surface until it loses flight speed. In this condition, the aircraft's main wheels either squeak or hit the runway with a gentle bump. When the wheels of the main landing gear are firmly on the runway, the pilot uses more and more back pressure on the steering wheel. This keeps the nose-high attitude of the aircraft, which prevents the nose wheel from touching the runway until the forward speed is much slower. The aim is to avoid over-resining and damaging nose gear when the nose wheel lands on the runway. Landing is the transition from flying to taxiing. It requires more judgment and technique than any other movement. There are more accidents during the landing phase than at any other flight stage. Variables that add to the calculation problem, such as the wind sheath and the up-and-down draft. Good pilots are easily recognized. They land smoothly in the middle of the runway on the main wheels and maintain positive directional guidance as the aircraft slows down to taxi speed. 34 Requirement 1e. Please explain the following: sports pilot, recreational pilot and private pilot licences; the classification of the meter. 35 Type of pilot certificatesSport Cannot carry more than one passenger licensed to fly only light sport aircraft during the day, only Recreational May flies aircraft of up to 180 horsepower (130 kW) and 4 seats during the day for fun only a private person is allowed to fly for fun or personal business. Private pilots cannot be paid, replaced for flying or hired by any operator. INSTRUMENT RATING An additional part of a private pilot rating allowing the pilot to fly under limited visibility conditions 36 2 Do two of the following:Take a flight to the aircraft with the permission of the parent. Save a date, place, and type and flight duration, and report on your flight impressions. Under supervision, carry out a pre-inspection of the light aircraft. Get and learn to read the aviation map. Measure the actual course in the chart. Correct it for magnetic variation, compass deviation and wind drift to determine the direction of the compass. Using one of the many flight simulator software packages available for computers. fly the course and direction you have prepared in requirement 2c or another course you have drawn. Explain the purposes and functions of the different instruments in a typical single-engine air start: attitude indicator, direction indicator, altimeter, air speed indicator, turn and bank indicator, vertical speedometer, compass, navigation (GPS and VOR) and communication radios, rpm meter, oil pressure gauge and oil temperature gauge. Create the original poster from the aircraft instrument panel. Include and recognize in requirement 2e. 37 Instruments 38 Instruments Air speed indicator This shows the speed at which the aircraft is moving in the air. The Airspeed detector is one of the pressure instruments using the grip-static system. Most air velocity indicators use a combination of impact air pressure (grips pipe) and static air pressure (from a static gate) to give the correct reading. The airspeed indicator shown that the air velocity is 135 knots (nautical miles per hour). Most modern aircraft use knots to measure speed. Nautical mile is 2,000 meters. Your family car uses the rules for miles an hour. The legal mileage is 1,500 meters. Attitude indicator This is also called an artificial horizon. This shows the attitude of the aircraft (nose up, nose down, wings to bank) in relation to the horizon. The attitude indicator is a gyroscopic instrument; This means that it uses a gyroscope to maintain its relative location. For most smaller private aircraft, the mounting detector gyroscope is spuded by high-speed air provided by a suction pump (vacuum pump) mounted on the aircraft's engine. The attitude indicator of the figure indicates a level flight (nose and wings are even with the horizon). Altimeter This shows the altitude of the aircraft above the average sea level when correctly adjusted to the current pressure setting. The altimeter uses a static air pressure administered by the static gates of the pitot-static system. The small knob adjusts the altimeter to the local air pressure to make the reading accurate. The supervisor simply adjusts the altimeter until the small window (Kollsman window) is set to the correct air pressure. The altimeter in the photo shows an altitude of 14,500 feet MSL. Turn and Bank Indicator This is also called a turn coordinator or sometimes a turn and slip detector. Turn and Bank indicator shows course The turnaround is a turnaround. The Turn part of the detector is a gyroscopic instrument. If you have a vacuum-operated attitude indicator, you want this important connection meter to use another power supply (usually the machine's electrical system). Mini-aircraft banks in the direction of translation. At the bottom of the instrument is a ball in a glass tube called a slope gauge. The slope gauge uses gravity and slowness for aircraft movements called slips and sliding rails. The slope gauge indicates whether the aircraft is on a coordinated flight (centralised) or an uncoordinated flight. The shift coordinator of the chapter tells about the level of the wings and the coordinated flight. Title indicator This displays the title (direction) that the aircraft is flying. This is also a gyroscopic instrument. The detector is not a compass, so it must be set to fit the magnetic compass of the aircraft. Compasses are notoriously unreliable when an aircraft turns, changes altitude or air speed. For this reason, pilots use a system that maintains accuracy at all stages of flight – a gyroscopy-driven indicator. For most smaller private aircraft, the dimmer gyroscope of the direction indicator is also s kehred by high-speed air available with a suction pump (vacuum pump) mounted on the aircraft engine. The number's title indicator indicates the north direction. Vertical speed indicator Also known as a VSI or VVI meter for military pilots. The VSI uses static pressure from a static grip-static system to give its readings. The VSI shows whether the aircraft is level, climbing or landing. The rate of take-off or landing shall be expressed in hundreds of metres per minute. The VSI in the photo indicates a level flight. Paragraph 39b. Build model FPG-9. Get others on a team or patrol to make your own model, and then have a competition to test the accuracy of the models' flight and landing. 40 Model FPG-9 See model and instructions. 41 Requirement 4 Do one of the following:Visit the airport. After the visit, report on how the facilities are used, how runways are numbered and how runways are defined as active. Visit the Air Traffic Control Tower, Terminal Radar Control, Air Traffic Control Center or Flight Standards District Office of the Federal Aviation Administration. (The phone book is in U.S. government offices, the Department of Transportation, the Federal Aviation Administration. Call in advance.) Report the operation and your impressions of the facility. Visit the Aviation Museum or attend an air show. Report your impressions of a museum or exhibition. 42 Requirement 5 Find out about three career opportunities in the aviation industry. Select one and find out the training and experience required for this profession. Discuss this with your instructor and explain why you might be interested in this profession. 43 Job opportunities Career Landing ModesEngineering Research & Development General Aviation Government Aviation Aerospace Industries Military Aerospace Aerospace (USAF, USN, USMC, USA, NOAA) National Aeronautics & Space Administration (NASA) Career with airlines: Pilot, MX technician, reservation salesman, flight attendant and avionics technician Landing Airport Manager, other airport careers (firefighter, security, emergency services, mx employees, skycaps, clerks, restaurant workers, concessionaire employees), fixed base operator Engineering Research & Development R & D expert General Aviation Business flying, executive flying, commercial aviation (air fare/charter operator, rental, aerial applications{crop dusting}), personal aviation, instructional flight, aircraft sales Government Aviation Federal Aviation Administration (FAA), air traffic controller, FAA operations and MX inspection Aerospace Industries Manufacturing of major carrier A/C (Boeing, McDonnell Douglas , Lockheed), general aviation manufacturing (Cessna, Learjet, Beech, Gulfstream, Piper), A/C engine manufacturers, military and space manufacturing Military Aerospace USAF , USN, USMC, USA, National oceanic & atmospheric administration (NOAA) NASA - Space sciences, life sciences, liquid and flight mechanics, materials and structures, propulsion systems, flight systems, measurement and instrumentation, information systems, experimental facilities, equipment and functions, administration and management