

- Aircraft Systems.

AS601. **The reciprocating engine operates on the basic principle of converting?** (AircraftSystems)

- a) Chemical (fuel) into Mechanical energy.
- b) Chemical (oil) into Mechanical energy.
- c) Air energy into Mechanical energy.



AS602. **In a two-stroke engine, the conversion of chemical energy into mechanical energy occurs in?** (AircraftSystems)

- a) Six-stroke operating cycle.
- b) Four-stroke operating cycle.
- c) Two-stroke operating cycle.

AS603. **In a four -stroke engine the conversion of chemical energy into mechanical energy occurs over a four stroke operating cycles. These cyclers are?** (AircraftSystems)

- a) Stroke, Plugds, Piston, Valves.
- b) Intake, Compression, Power, Exhaust.
- c) Compression, Piston, Exhaust, Stroke
- d) _____

AS604. **This begins when the intake valve closes and the piston starts moving back to the top of the cylinder. The phase of the cycle is used to obtain a much greater power output from the fuel/air mixture once it is ignited.** (AircraftSystems)

- a) Intake.
- b) Power.
- c) Compression.
- d) _____

AS605. **This phase begins when the exhaust valve opens and the piston starts to move toward the cylinder head once again.** (AircraftSystems)

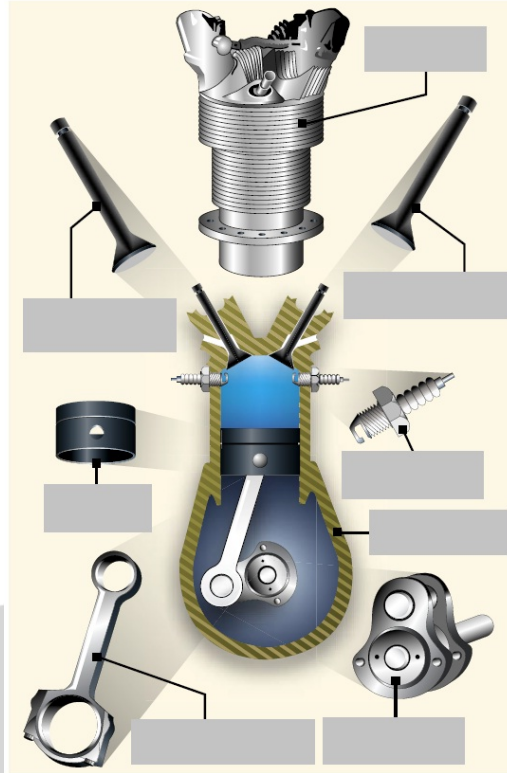
- a) Power Stroke
- b) Intake Stroke
- c) Compression Stroke.
- d) _____

AS606. **Is a rotating airfoil, subject to induced drag, stalls, and other aerodynamic principles that apply to any airfoil? It provides the necessary thrust to pull, or in some cases push, the aircraft through the air.** (AircraftSystems)

- a) Popeller
- b) Wing
- c) Engine
- d) _____



- A) Cylinder
- B) Exhaust Valve
- C) Intake Valve
- D) Piston
- E) Spark Plug
- F) Crankcase
- G) Crankshaft
- H) Connecting Rod



AS607. The amount of thrust produced by the propeller it depends on the? (AircraftSystems)

- a) Shape of the airfoil, angle of attack, revolutions per minute of the engine
- b) Shape of the wing, Angle of attack of the wing , revolutions per minute of the engine.
- c) Shape of the engine, Angle of attack, revolutions per minute of the propeller.

AS608. Which types of propeller are small aircraft commonly equipped with? (AircraftSystems)

- a) Fixed–Thrust Propeller, Adjustable-Pitch Propeller.
- b) Fixed –Pitch Propeller, Adjustable-Thrust Propeller.
- c) Fixed-Pitch Propeller, Adjustable –Pitch Propeller.

AS609. The pitch of this propeller is set by the manufacturer and cannot be changed. (AircraftSystems)

- a) Adjustable –thrust Propeller
- b) Fixed- Thrust Propeller
- c) Fixed-Pitch Propeller

AS610. A tachometer is calibrated in hundreds of RPM and gives a direct indication of the? (AircraftSystems)

- a) Engine and Propeller RPM.
- b) Compressor and Wing RPM.
- c) Power and Exhaust RPM.

AS611. The main advantage of a constant-speed propeller is? (AircraftSystems)

- a) That it converts a high percentage of brake horsepower (BHP) into thrust horsepower (THP) over a wide range of rpm and airspeed combinations.
- b) That it converts a high percentage of brake into thrust power over a wide range of rpm and airspeed combinations.
- c) It allows selection of the most efficient engine rpm for the given conditions.

AS612. This type of carburetor complete with idling, accelerating, mixture control, idle cutoff, and power enrichment systems is probably the most common of all carburetor types. (AircraftSystems)

- a) Float Type.
- b) Pressure Type
- c) Fuel inject.

AS613. Whenever the throttle is closed during flight, the engine cools rapidly and vaporization of the fuel is less complete than if the engine is warm. Also, in this condition, the engine is more susceptible to? (AircraftSystems)

- a) Pre-ignition
- b) Engine icing.
- c) Carburetor icing.

AS614. The use of carburetor heat causes a decrease in engine power, sometimes up to. (AircraftSystems)

- a) 15%
- b) 50%
- c) 48%

AS615. The fuel is injected directly into the cylinders, or just ahead of the intake valve. The air intake for the fuel injection system is with an alternate air source located within the engine cowl. (AircraftSystems)

- a) Jet engine.
- b) Turbo engine
- c) Fuel Injection Engine

AS616. A fuel injection system usually incorporates six basic components. (AircraftSystems)

- a) Engine-driven fuel pump, a fuel/air control unit, fuel manifold (fuel distributor), discharge nozzles, an auxiliary fuel pump, and fuel pressure/flow indicators.
- b) fuel/air control unit, fuel manifold (fuel distributor), discharge nozzles, carburetor, carburetor heat, throttle.
- c) Cylinders, fuel pump, throttle, manifold, discharge nozzles, auxiliary fuel pump.

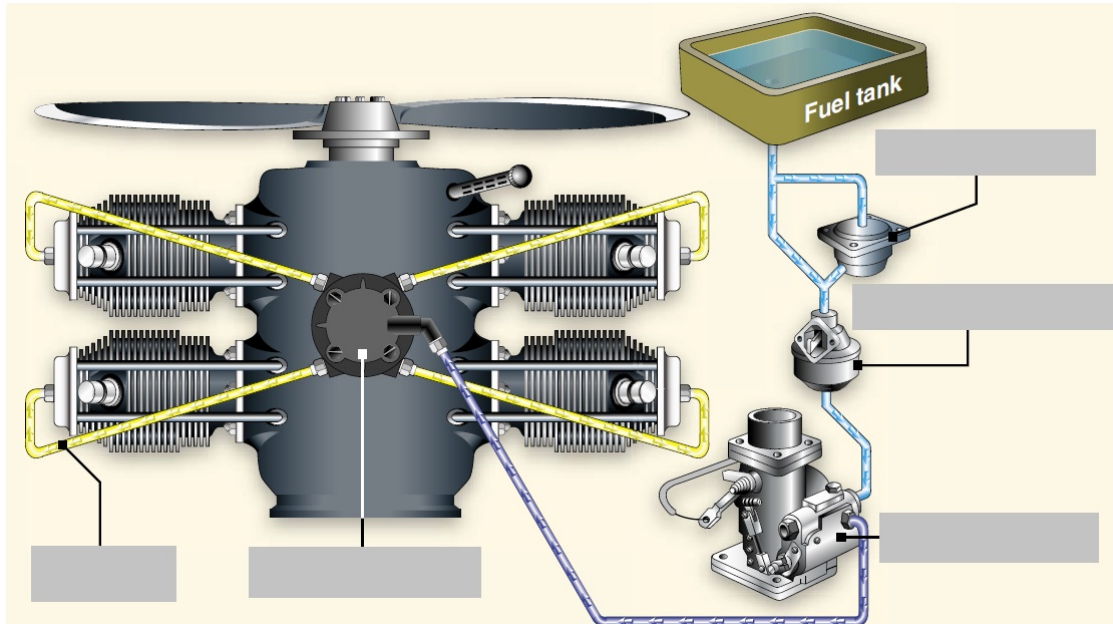
AS617. Provides fuel under pressure to the fuel/air control unit for engine starting and/or emergency use. (AircraftSystems)

- a) Engine-driven fuel pump
- b) Fuel pump
- c) Auxiliary fuel pump

AS618. When the fuel reaches the manifold valve, this is distributed to each individual. (AircraftSystems)

- a) Fuel Pump
- b) Fuel discharge nozzles.
- c) Auxiliary Fuel Pump.

- Fuel injection system.



- A) Auxiliary fuel pump B) Fuel manifold valve C) Fuel Lines
D) Engine-Driven Fuel Pump E) Fuel/air Control unit.

AS619. This system helps increase manifold pressure and forces the fuel/air mixture into the cylinders. The higher the manifold pressure, the more dense the fuel/air mixture, and the more power an engine can produce. (AircraftSystems)

- a) Supercharger engine.
- b) Fuel injection engine.
- c) TurboFan engine.

AS620. When an aircraft climbs, it eventually reaches an altitude where the MAP is insufficient for a normal climb because the limited power that the engine can produce. (AircraftSystems)

- a) Absolute Altitude
- b) Aircraft Service Ceiling.
- c) True Altitude.

AS621. A supercharger is capable of boosting manifold pressure above? (AircraftSystems)

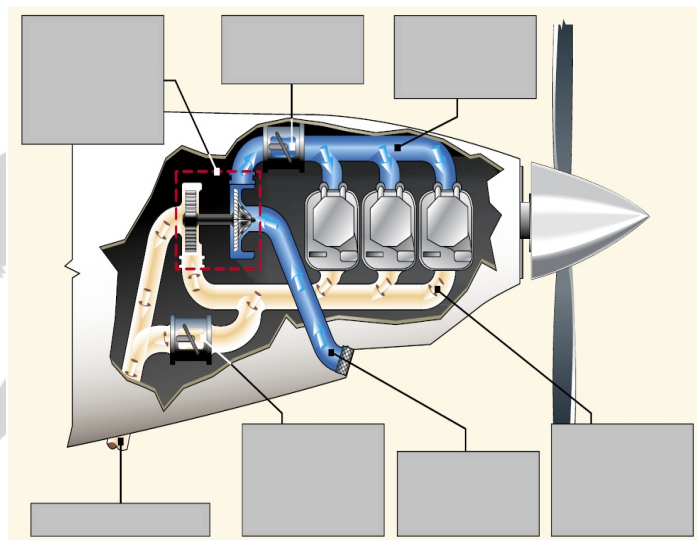
- a) 10"Hg.
- b) 30"Hg.
- c) 20"Hg.

AS622. Superchargers engine can have one or more stages. Each stage provides an increase in pressure; the stage may be classified as? (AircraftSystems)

- a) First stage, Middle stage, last stage.
- b) Up stage, Low stage, middle stage.
- c) Single stage, two stage, multistage, etc.

- TURBOCHARGE COMPONENTS

- A. TURBOCHARGER
- B. INTAKE MANIFOLD
- C. WASTE GATE
- D. AIR INTAKE
- E. EXHAUST MANIFOLD
- F. THROTTLE BODY
- G. EXHAUST GAS DISCHARGE



AS623. In climb of an aircraft equipped with a turbocharging system, the waste gate is gradually closed to maintain the maximum allowable manifold pressure. At some point, the waste gate will be fully closed and further increases in altitude will cause the manifold pressure to decrease, this altitude is now as? (AircraftSystems)

- a. Absolute Altitude.
- b. Critical Altitude.
- c. Service ceiling.

AS624. Is the maximum density altitude where the best rate-of-climb airspeed will produce a 100-feet-per-minute climb with maximum continuous power, maximum weight and in a clean configuration? (AircraftSystems)

- a. Absolute Altitude.
- b. Critical Altitude.
- c. Service ceiling.

AS625. This generates sufficiently high voltage to jump a spark across the spark plug gap in each cylinder. The system begins to fire when the starter is engaged and the crankshaft begins to turn and continues to operate whenever the crankshaft is rotating. (AircraftSystems)

- a. Ignition
- b. Cylinders
- c. Magneto



AS626. In an aircraft without cowl flaps, the engine temperature can be controlled by? (AircraftSystems)

- a. Reduce power
- b. Lean Mixture
- c. Changing the airspeed or the power output of the engine.

AS627. An engine detonation is characterized by high cylinder head temperatures and is most likely to occur when operating at high power settings. The Common operational causes of detonation are: (AircraftSystems)

- a. Operation of the engine at high power settings with an excessively lean mixture.
- b. Use of a lower fuel grade than that specified by the aircraft manufacturer.
- c. Maintaining extended ground operations or steep climbs in which cylinder cooling is reduced.
- d. All

AS628. A premature burning in a cylinder is usually caused by a residual hot spot in the combustion chamber, often created by a small carbon deposit on a spark plug, a cracked spark plug insulator, or other damage in the cylinder that causes a part to heat sufficiently to ignite the fuel/air charge. (AircraftSystems)

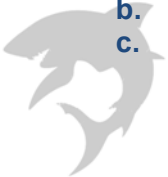
- a. Pre ignition
- b. Detonation
- c. Carburetor icing.

AS629. This is an uncontrolled, explosive ignition of the fuel/air mixture in the cylinder's combustion chamber. It will cause an excessive temperatures and pressures which, if not corrected, can quickly lead to failure of the piston, cylinder, or valves. (AircraftSystems)

- a. Detonation
- b. Pre ignition
- c. Ignition

AS630. This system consisting of a digital computer and ancillary components that control an aircraft's engine and propeller. Eliminate the need for magnetos, carburetor heat, mixture controls, and engine priming. (AircraftSystems)

- a. Full Authority Digital Engine Control
- b. FADC
- c. Fuel Injection Engine



AS631. An aircraft turbine engine consists of an air inlet, compressor, combustion chambers, a turbine section, and exhaust. Thrust is produced by. (AircraftSystems)

- a. Increasing the velocity of the air flowing through the engine.
- b. Increasing the velocity of the fuel through the engine.
- c. By ignition.



AS632. Turbine engines are classified according to the type of Compressors they use. What are the three types of compressors that exist? (AircraftSystems)

- a. Turbo fan, Turbo jet, Turbo prop.
- b. Centrifugal flow, axial flow, Centrifugal-axial Flow
- c. Centrifugal-axial Flow, Turbo jet, Centrifugal turbo jet

AS633. The path that air takes through the engine and how power is produced determines the type of engine. What are the four types of turbine engines? (AircraftSystems)

- a. Turbojet, Turboprop, Turbofan, and Turboshaft.
- b. Centrifugal flow, axial flow, Centrifugal-axial Flow, Turbofan
- c. Turbo, prop turbine, fan turbine, shaft turbine.

AS634. A turbojet engine consists of four sections: compressor, combustion chamber, turbine section, and exhaust. The compressor section passes inlet air at a high rate of speed to the combustion chamber. The combustion chamber contains. (AircraftSystems)

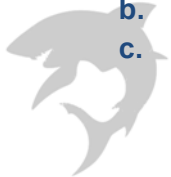
- a. Cylinders, fuel pump, throttle.
- b. Fuel inlet and igniters.
- c. Cylinders, Turbo Shaft.

AS635. Represents the rotational speed of the high pressure compressor and is presented on the indicator as a percentage of design rpm. (AircraftSystems)

- a. N_2
- b. EGT
- c. N_1

AS636. Turboprop engines are most efficient at speeds between 250 and 400 mph and altitudes between. (AircraftSystems)

- a. 18,000 and 30,000 feet
- b. 18,000 and 35,000 feet
- c. 18,500 and 36,000 feet



AS637. Represents the rotational speed of the low pressure compressor and is presented on the indicator as a percentage of design rpm. (AircraftSystems)



- a. N_2
- b. EGT
- c. EPR
- d. _____

AS638. The minimum specific fuel consumption of the turboprop engine is normally available in the altitude range of? (AircraftSystems)

- a. 18,000 to 30,000 feet
- b. 25,000 to 30,000 feet
- c. 25,000 to the tropopause

AS639. The inlet air that passes through a turbofan engine is usually divided into two separate streams of air. One stream passes through the engine core, while a second stream bypasses the engine core. It is this bypass stream of air that is responsible for the term "bypass engine." A turbofan's bypass ratio refers to ? (AircraftSystems)

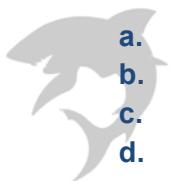
- a. the ratio of the mass airflow that passes through the fan divided by the mass airflow that passes through the engine core.
- b. the ratio of the mass airflow that passes through the chamber divided by the mass airflow that passes through the engine fan.
- c. the ratio of the mass airflow that passes through the fan divided by the ratio airflow that passes through the engine core.

AS640. The biggest difference between a turbojet and turboshaft engine is . (AircraftSystems)

- a. Turboshaft engine most of the energy produced by the expanding gases is used to drive thrust rather than produce turbine rather.
- b. Turboshaft engine most of the energy produced by the expanding gases is used to drive a turbine rather than produce thrust.
- c. Turboshaft engine most of the energy produced by the expanding gases is used to speed a turbine rather than produce drag.

AS641. Is the ratio of turbine discharge to compressor inlet pressure. Pressure measurements are recorded by probes installed in the engine inlet and at the exhaust. Once collected, the data is sent to a differential pressure transducer, which is indicated on a flight deck. (AircraftSystems)

- a. N_1
- b. Exhaust Gas Temperature.
- c. N_2
- d. _____



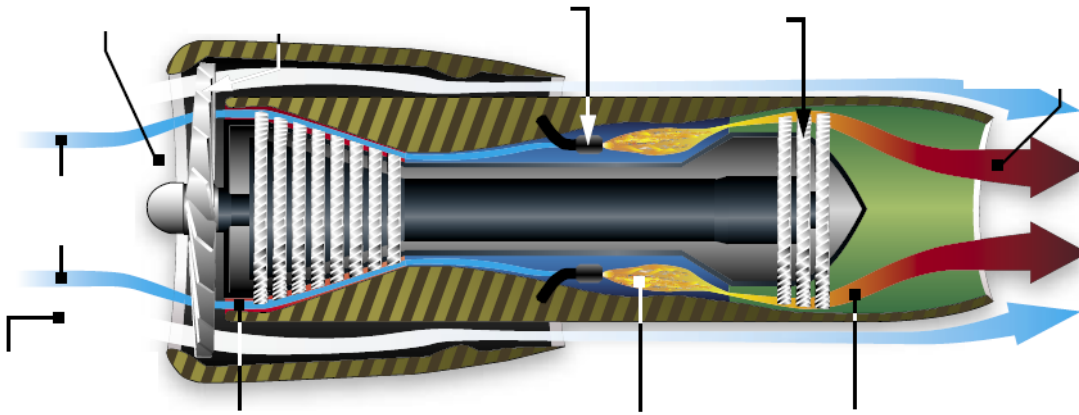
AS642. Is an imbalance between the two vector quantities, inlet velocity and compressor rotational speed. Occurs when the compressor blades' angle of attack exceeds the critical angle of attack. At this point, smooth airflow is interrupted and turbulence is created with pressure fluctuations.

(AircraftSystems)



- a. Flameout
- b. Compressor Stalls
- c. Hot start

- Turbo Fan Engine



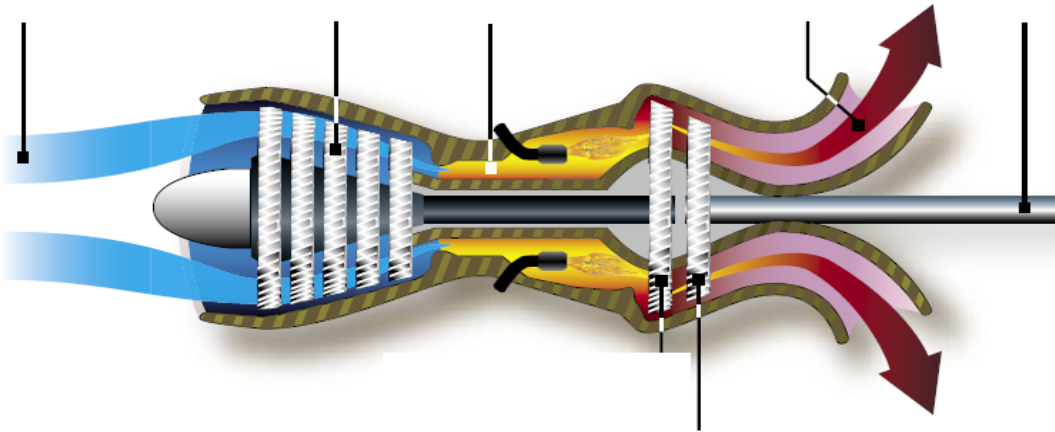
- A) Primary Air Stream
- B) Duct Fan
- C) Turbine
- D) Hot Gases
- E) Nozzle
- F) Combustion Chamber
- G) Compressor
- H) Secondary air Stream
- I) Inlet
- J) Fuel injector

AS643. With respect to turboprop engines, the sum of the shaft horsepower (SHP) delivered to the propeller and THP produced by the exhaust gases. (AircraftSystems)

- a. Trust Horsepower
- b. Equivalent Shaft Horsepower
- c. Net Thrust



- Turboshaft



- B) Exhaust
- C) Compressor turbine
- D) Power Shaft
- E) Free (power) Turbine
- F) Compressor
- G) Inlet

AS644. The horsepower actually delivered to the output shaft. Is the actual usable horsepower. (AircraftSystems)

- a. Brake horsepower (BHP)
- b. Equivalent Shaft Horsepower
- c. Thrust Horsepower

AS645. It is caused by too much fuel entering the combustion chamber, or insufficient turbine rpm. (AircraftSystems)

- a. Cool Start
- b. Hung Start
- c. Hot Start

AS646. What may cause engine detonation? (AircraftSystems)

- a. High octane fuel.
- b. Low manifold pressure.
- c. Excessively lean fuel-air mixture.

AS647. The temperature of a turbine section must be monitored closely to prevent overheating the turbine blades and other exhaust section components. One common way of monitoring the temperature of a turbine section is. (AircraftSystems)

- a. With a Fuel gauge.
- b. With a EPR gauge.
- c. With a EGT gauge.

AS648. Indications of a transient/intermittent stall are usually an intermittent “bang” as backfire and flow reversal take place. (AircraftSystems)



- a. Cool Start
- b. Hot Start
- c. Flameout
- d. _____

AS649. Lower grades of fuel are used in lower-compression engines. (AircraftSystems)

- a. Because these fuel ignite at higher temperature.
- b. Because these fuel ignite at lower temperature.
- c. Because lower fuel is only for light airplanes.

AS650. Several grades of AVGAS are available. Care must be exercised to ensure that the correct aviation grade is being used for the specific type of engine. The proper fuel grade is stated in. (AircraftSystems)

- a. Placards in the flight deck.
- b. AFM/POH
- c. Next to the filler caps.

AS651. Controls the rate of charge to the battery by stabilizing the generator or alternator electrical output. The generator/alternator voltage output should be higher than the battery voltage. (AircraftSystems)

- a. Thrust control
- b. Mixture Control
- c. Propeller Control
- d. _____

AS652. Most direct-current generators will not produce a sufficient amount of electrical current at low engine rpm to operate the entire electrical system. During operations at low engine rpm, the electrical needs must be. (AircraftSystems)

- a. Generator
- b. Alternator
- c. Battery

AS653. Shows if the alternator/generator is producing an adequate supply of electrical power. It also indicates whether or not the battery is receiving an electrical charge. (AircraftSystems)

- a. RPM gauges
- b. Manifold gauges
- c. EGT gauges
- d. _____

AS654. Is a cylinder with a piston inside that turns fluid power into work and creates the power needed to move an aircraft system or flight control. (AircraftSystems)

- a. Generator
- b. Vacuum pump
- c. Servo

- AS655. Provides an outlet for the system in the event of excessive fluid pressure in the hydraulic system.** (AircraftSystems)
- a. Vacuum pump
 - b. Relief valve
 - c. Electrical pump
- AS656. This type of landing gear tends to prevent ground looping (swerving) by providing more directional stability during ground operation since the aircraft's center of gravity (CG) is forward of the main wheels. The forward CG keeps the airplane moving forward in a straight line rather than ground looping.** (AircraftSystems)
- a. Tailwheel Landing Gear
 - b. Tricycle Landing Gear
 - c. Retractable Landing Gear
- AS657. Is a change in cabin pressure faster than the lungs can decompress, possibly causing lung damage. Normally, the time required to release air from the lungs without restrictions, such as masks, is 0.2 seconds.** (AircraftSystems)
- a. Decompression
 - b. Explosive decompression
 - c. Rapid decompression
- AS658. Prevents cabin pressure from exceeding a predetermined differential pressure above ambient pressure in a pressurized aircraft.** (AircraftSystems)
- a. Vacuum pump
 - b. Relief valve
 - c. Dump valve
- AS659. A change in cabin pressure in which the lungs decompress faster than the cabin, resulting in no likelihood of lung damage.** (AircraftSystems)
- a. Decompression
 - b. Explosive decompression
 - c. Rapid decompression
- AS660. is defined as the inability of the aircraft's pressurization system to maintain its designed pressure differential. This can be caused by a malfunction in the pressurization system or structural damage to the aircraft.** (AircraftSystems)
- a. Pressurization failure
 - b. Decompression
 - c. Compression
- AS661. Many turboprop aircraft divert engine bleed air to the wing to inflate the rubber boots. Upon inflation, the ice is cracked and should fall off the leading edge of the wing.** (AircraftSystems)
- a. Anti-Ice System.
 - b. Deice boots.
 - c. Anti-Ice Boots

AS662. **What should be the first action after starting an aircraft engine?** (AircraftSystems)

- a. Turn on the battery
- b. Adjust for the proper RPM and check for desired indication on the engine gauges
- c. Adjust for the proper lean and check for desired indication on the engine gauges



AS663. **For internal cooling air cooled engines are especially dependent on?** (AircraftSystems)

- a. The circulation of the fuel engine
- b. The circulation of the air in the cabin
- c. The circulation of lubricating oil.

AS664. **What is controlled by the waste gate of a turbocharged-reciprocating engine?** (AircraftSystems) PLT001 ATP884

- a. Exhaust gas discharge
- b. Intake manifold
- c. Turbo gas discharge

AS665. **As outside pressure decreases, thrust output will?** (AircraftSystems) PLT127 ATP256

- a. Increases due to higher density altitude.
- b. Increases due to lower density altitude.
- c. Decrease due to higher density altitude.

AS666. **What characterizes a transient compressor stall?** (AircraftSystems) PLT001 ATP875

- a. Loud, steady roar accompanied by heavy shuddering.
- b. Intermittent "bang," as backfires and flow reversals take place.
- c. Sudden loss of thrust accompanied by a loud whine.

AS667. **Which place in the turbojet engine is subjected to the highest temperature?** (AircraftSystems) PLT343 ATP254

- a. Turbine inlet.
- b. Fuel spray nozzles.
- c. Compressor discharger.

AS668. **What effect, if any, does high ambient temperature have upon the thrust output of a turbine engine?**
(AircraftSystems) PLT343 ATP874

- a. Thrust will be higher because more heat energy is extracted from the hotter air.
- b. Thrust will be reduced due to the decrease in air density.
- c. Thrust will remain the same, but turbine temperature will be higher.



AS669. Which type of compressor stall has the greatest potential for severe engine damage? (AircraftSystems)

PLT 001 ATP877



- a. Transient blackfire stall
- b. Steady, continuous flow reversal stall
- c. Intermittent blackfire stall.

AS670. What effect does high relative humidity have upon the maximum power output of the modern aircraft engines? (AircraftSystems) PLT 001 ATPGLEIM102

- a. Neither turbojet nor reciprocating engines are affected.
- b. Reciprocating engines will experience a significant loss of BHP.
- c. Turbo engines will experience a significant loss of thrust.



- Aerodynamics of flight



AF401. Which force opposes or overcomes the force of drag. It also acts parallel to the longitudinal axis.

(Aerodynamics of flight)

- a. Flightpath
- b. Weight
- c. Lift
- d. _____

AF402. Considered any surface, like a wing, propeller, rudder, or even a trim tab, which provides aerodynamic forces when it interacts with a moving stream of air? (Aerodynamics of flight)

- a. Lift
- b. Thrust
- c. Airfoil

AF403. It opposes the downward force of weight, and is produced by the dynamic effect of the air acting on the airfoil. (Aerodynamics of flight)

- a. Weight
- b. Lift
- c. Thrust

AF404. Is the angle formed between the chord line of an airfoil and the direction of the air striking the airfoil? (Aerodynamics of flight)

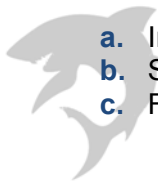
- a. Drag
- b. Relative wind
- c. Angle of attack

AF405. Which is the type of Parasite Drag that comes from the intersection of airstreams that creates eddy currents, turbulence, or restricts smooth airflow? For example, the intersection of the wing and the fuselage at the wing root. (Aerodynamics of flight)

- a. Interference Drag.
- b. Form Drag.
- c. Skin Friction Drag.

AF406. Name the aerodynamic resistance that in contact with the moving air of e surface of an aircraft.this resistance result due the apparent smooth surface, which is rugged even after being inspected under a microscope. (Aerodynamics of flight)

- a. Induced Drag
- b. Skin Friction Drag.
- c. From Drag.



AF407. In level flight the aerodynamic properties of a wing or rotor produce a required lift, but this can be obtained only at the expense of a certain penalty. (Aerodynamics of flight)

- a. Induced Drag
- b. Skin Friction Drag.
- c. From Drag

AF408. This force is involved in overcoming inertia, and may be defined as a change in velocity per unit of time. (Glossary)

- a. Drag.
- b. Acceleration.
- c. Lift

AF409. The ratio between lift pressure and dynamic pressure is? (Aerodynamics of flight)

- a. Lift/Drag ratio
- b. Coefficient of Lift
- c. Coefficient of Drag.

AF410. This ratio is determined by dividing the CL by the CD, which is the same as dividing the lift equation by the drag equation. (Aerodynamics of flight)

- a. C_L/C_D Ratio
- b. L/D Ratio
- c. S/L Ratio

AF411. This can be expressed in inches from the reference datum, or in percentage of mean aerodynamic chord (MAC). His location depends on the distribution of weight in the airplane. (Aerodynamics of flight)

- a. Chord line.
- b. Weight
- c. C_L
- d. _____

AF412. Is the range between the forward and aft CG limits, wish is indicated on the airplane's POH. (Aerodynamics of flight)

- a. Center of Gravity range.
- b. Center of Gravity limits.
- c. Chord line.

AF413. Density is affected by several factors: pressure, temperature, and humidity. At an altitude of 18,000 feet, the density of the air has one-half the density of air at sea level. In order to maintain its lift at a higher altitude, an aircraft must fly at a? (Aerodynamics of flight)

- a. Greater true airspeed for any given AOA.
- b. Less airspeed for any given AOA
- c. Equal airspeed for any given AOA.

AF414. Is the science of action of air in an object with the motion of air on other gases, which deals with the production of lift by the aircraft, the relative wind, and the atmosphere? (Aerodynamics of flight)

- a. Air factors.
- b. Aerodynamics.
- c. Weather theory.

AF415. On which configuration, are aircraft's wingtip vortices grater? (Aerodynamics of flight)

- a. Clean, fast, light.
- b. Clean, heavy, slow.
- c. Dry, slow, heavy.

AF416. Why do helicopter vortices should be avoided? (Aerodynamics of flight)

- a. Because lift that generated.
- b. Because the Forward flight airspeeds are often very slow and can generate exceptionally strong wake turbulence.
- c. _____

AF417. In aerodynamic terms, is the mathematical measure of an aircraft's tendency to rotate about its CG? (Aerodynamics of flight)

- a. Aerodynamic chord
- b. Moment
- c. Stability.

AF418. Is the angle formed by the chord line of the wing and a line parallel to the longitudinal axis of the airplane? (Aerodynamics of flight)

- a. Angle of attack
- b. Angle of incidence
- c. Relative wind

AF419. One of the direct results of ground effect is the variation of induced drag with wing height above the ground at a constant C_L . When the wing is at a height equal to its span, the reduction in induced drag is only. (Aerodynamics of flight)

- a. 1.4%
- b. 23.5%
- c. 47.6%

AF420. This is expressed in terms of the distance of the arm times the aircraft's weight, or simply, inch-pounds. (Aerodynamics of flight)

- a. Arm.
- b. Weight
- c. Moment

AF421. If an aircraft is to fly straight and steady along any arbitrary flightpath, the forces acting on it must be in static equilibrium. The reaction of any body when its equilibrium is disturbed is referred to as? (Aerodynamics of flight)

- a. Moment.
- b. Stability.
- c. Static.
- d. _____

AF422. This effect is a coupled lateral/directional oscillation that is usually dynamically stable but is unsafe in an aircraft because of the oscillatory nature? (Aerodynamics of flight)

- a. Dutch roll
- b. Spiral
- c. Free Oscillations.

AF423. The force of lift during a turn is separated into two components forming right angles perpendicular to each other. This component, which acts vertically and opposite to the weight (gravity), is called? (Aerodynamics of flight)

- a. vertical component of lift
- b. horizontal component of lift
- c. Newton's First Law of Motion

AF424. Is referred to "equal and opposite reaction" of the aircraft to the change in direction and acts equal and opposite to the horizontal component of lift. That's why, in a correctly executed turn, the force that turns the aircraft is not supplied by the rudder. (Aerodynamics of flight)

- a. Vertical component of lift
- b. Newton's First Law of Motion
- c. Centrifugal Force.

AF425. As the angle of bank is increased, the horizontal component of lift increases, consequently, at any given airspeed, the ROT can be controlled by? (Aerodynamics of flight)

- a. Adjusting the angle of attack.
- b. Adjusting the angle of incidence.
- c. Adjusting the angle of bank.

AF426. This turn results from an excess of centrifugal force over the horizontal lift component, pulling the aircraft toward the outside of the turn. (Aerodynamics of flight)

- a. Coordinated turn.
- b. Skidding turn.
- c. Slipping turn.

AF427. Since the C_L increases with an increase in AOA, at some point the C_L peaks and then begins to drop off, this peak is called? (Aerodynamics of flight)

- a. Maximum Coefficient of lift
- b. Maximum angle of attack
- c. Minimum Coefficient of lift

AF428. This reaction involves Newton's Third Law of Physics—for every action, there is an equal and opposite reaction. As applied to the aircraft, this means that as the internal engine parts and propeller are revolving in one direction, an equal force is trying to rotate the aircraft in the opposite direction. (Aerodynamics of flight)

- a. Gyroscopic reaction
- b. P-factor
- c. Corkscrew
- d. _____

AF429. The slipstream of a propeller-driven airplane rotates around the airplane. This slipstream strikes the left side of the vertical fin, causing the aircraft to yaw slightly. The rudder offset is sometimes used by aircraft designers to counteract this type of tendency. (Aerodynamics of flight)

- a. Slipstream
- b. P-Factor
- c. Spiraling Slipstream.

AF430. Any time a force is applied to deflect the propeller out of its plane of rotation, the resulting force is 90° ahead of and in the direction of rotation also, the direction of application, causing a pitching moment, a yawing moment, or a combination of the two depending upon the point at which the force was applied. This effect is called? (Aerodynamics of flight)

- a. Slipstream
- b. Precession
- c. Asymmetric

AF431. Is the applied force to an aircraft that deflects its flight from a straight line which produces a stress on its structure, this force is called? (Aerodynamics of flight)

- a. Precession
- b. P-Factor
- c. Load Factor

AF432. If an aircraft is pulled up from a dive, subjecting the pilot to 3 Gs, What is the name of the force on which the pilot would be subject to an increase of his weight by at least three times?

- a. Precession
- b. P-Factor
- c. Gravity
- d. _____

AF433. When a sufficiently high AOA is imposed, the smooth flow of air over an airfoil breaks up and separates, producing an abrupt change of flight characteristics and a sudden loss of lift, which results in? (Aerodynamics of flight)

- a. Stall
- b. Spin
- c. Steep turn

AF434. A study of this effect has revealed that the aircraft's stalling speed increases in proportion to the square root of the load factor. This means that an aircraft with a normal unaccelerated stalling speed of 25 knots can be stalled at 50 knots by inducing a load factor of? (Aerodynamics of flight)

- a. 4Gs
- b. 2Gs
- c. 5Gs

AF435. Is the maximum speed at which full, abrupt control movement can be used without overstressing the airframe? (Glossary)

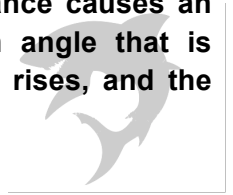
- a. V_S
- b. V_{LO}
- c. V_2
- d. _____

AF436. Is the ratio of a specified load to the total weight of the aircraft? The specified load is expressed in terms of any of the following: aerodynamic forces, inertial forces, or ground or water reactions.

(Glossary)

- a. Gravity
- b. Load Factor
- c. Stall

AF437. Is the type of wing in which the leading edge slopes backward? When a disturbance causes an aircraft to slip or drop a wing, the low wing presents its leading edge at an angle that is perpendicular to the relative airflow. As a result, the low wing acquires more lift, rises, and the aircraft is restored to its original flight attitude. *(Aerodynamics of flight)*



- d. Delta Wing
- e. Elliptical Wing
- f. Sweepback Wing

AF438. As the wings approach the level position, the AOA on both wings once again are equal, causing the rolling tendency to subside. The effect of this type of wing is to produce a rolling tendency to return the aircraft to a laterally balanced flight condition when a sideslip occurs. *(Aerodynamics of flight)*

- a. Sweepback wing
- b. Inverted wing
- c. Dihedral

AF439. This type of situation is produced due to an overbanking tendency which, if not corrected by the pilot, will result in an angle of bank becoming steeper and steeper. And at the same time, the strong directional stability that yaws the aircraft into the relative wind is going to force the nose to a lower pitch attitude. Hence, a slow downward spiral begins which, if not counteracted by the pilot, it gradually increases into a steep dive. *(Aerodynamics of flight)*

- a. Stall
- b. Dutch roll
- c. Steep Spiral

AF440. On this situation the aircraft is not turning at the appropriate rate to the angle of bank used, since the aircraft is yawed toward the outside of the turning flight path. The aircraft is banked too much for the ROT, so the horizontal lift component is greater than the centrifugal force. *(Aerodynamics of flight)*

- a. Spin
- b. Slipping turn
- c. Skidding turn

AF441. The most critical CG violation would occur when operating with a CG which exceeds the rear limit. In this situation. *(Aerodynamics of flight)*

- a. A pilot may not be able to generate sufficient force with the aileron to counteract the excess weight aft of the CG.
- b. A pilot may not be able to generate sufficient force with the elevator to counteract the excess weight aft of the CG.
- c. A pilot may not be able to generate sufficient force with the rudder to counteract the excess weight aft of the CG.

AF442. The leading edge surface of the propeller is curved, similar to the upper surface of an aircraft wing, while the other blade surface is? (Aerodynamics of flight)

- a. Flat like the bottom surface of a wing.
- b. Curved like the bottom surface of a propeller.
- c. Flat like the bottom surface of a fuselage.



AF443. This speed is defined as the maximum operating limit speed, expressed in Mach number. (Aerodynamics of flight)

- a. V_{MO}
- b. V_{NE}
- c. M_{MO}

AF444. Is the operating speed limit usually associated with operations at lower altitudes and deals with structural loads and flutter? (Aerodynamics of flight)

- a. M_{MO}
- b. V_{MO}
- c. V_{NE}

AF445. Is simply the ratio of the true airspeed to the speed of sound at flight conditions? (Aerodynamics of flight)

- a. True speed
- b. Indicated speed
- c. Mach Number

AF446. At some point the stall speed of the aircraft in Mach number could equal the M_{MO} of the aircraft, and the pilot could neither slow down (without stalling) nor speed up (without exceeding the max operating speed of the aircraft). This term is call? (Aerodynamics of flight)

- a. Mach excess
- b. Coffin Corner
- c. Speed of Sound

AF447. This type of boundary layer flow creates less skin friction drag than the turbulent flow, but is less stable. (Aerodynamics of flight)

- a. Turbulent Boundary Layer
- b. Laminar Boundary Layer
- c. Boundary Layer Separation



AF448. The angle of attack at which a wing stalls remains constant regardless of (Aerodynamics of flight)

- a. Wing span, weight, density altitude
- b. Weight, dynamic pressure, bank angle, or pitch altitude.
- c. Dynamic pressure, wing span, bank angle, or density altitude.



AF449. If the same angle of attack is maintained in ground effect as when out ground effect, lift will? (Aerodynamics of flight)

- a. Increase, and induce drag will decrease.
- b. Decrease, and induce drag will decrease.
- c. Equal, and induce drag will decrease.

AF450. What is the best indicator to the pilot if the effect of the load factor is present on the airplane. (Aerodynamics of flight)

- a. How the airplane is pressed into the maneuver
- b. How firmly the pilot is pressed into the seat during a maneuver
- c. How firmly the wing is pressed on a 45° turn in flight.

AF451. Which statement is true, regarding the opposing forces acting on an airplane in steady-state level flight? (Aerodynamics of flight)

- a. These forces are imbalance.
- b. These Forces are equal.
- c. Thrust it's greater than drag.

AF452. Is used to correct any deviation between the straight track of the nose and tail of the aircraft. (Aerodynamics of flight)

- a. Ailerons
- b. Spoilers
- c. Trim sys.
- d. _____

AF453. Which changes on the airplane's longitudinal control must made to maintain altitude while the airspeed is being decreased. (Aerodynamics of flight)

- a. Increase the angle of attack to compensate for the decreasing lift.
- b. Increase drag to compensate the excess of trust.
- c. Increase the angle of attack to compensate for the increased lift.



AF454. To produce the same lift while in ground effect as when out the ground effect, the airplane requires.

(Aerodynamics of flight) COM250V11

- a. A higher AOA
- b. A lower AOA
- c. A lower Ground speed



AF455. In theory, if the angle of attack and other factors remain constant and the airspeed is doubled, the lift produced at the higher speed will be. (Aerodynamics of flight) COM220

- a. Four times greater than at lower speed
- b. Two times greater than at lower speed
- c. Four times lower than at greater speed

AF456. In a rapid recovery form a dive, the effects of load factor would cause the stall speed to. (Aerodynamics of flight) COM178

- a. Decrease
- b. Increase
- c. Equal

AF457. If the airplane attitude remains in a new position after the elevator control is pressed forward and released, the airplane displays. (Aerodynamics of flight) COM240 PLT480

- a. Positive dynamic stability
- b. Negative longitudinal static stability
- c. Neutral longitudinal static stability

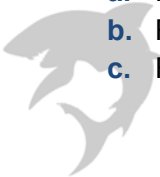
AF458. A rectangular wing, as compared to other wing structures, has the tendency to stall first at the. (Aerodynamics of flight) COM218

- a. Wing root, with the stall progression toward the wing tip.
- b. Wing tip, with the stall progression toward the wing root
- c. Wing root and wing tip stall the same time.

AF459. Which is true regarding the forces acting on an aircraft in a steady-state decent? The sum of all.

(Aerodynamics of flight) COM235

- a. Forward forces are equal to the sum of all rearward forces.
- b. Rearward forces are equal to the sum of all forward forces.
- c. Forward forces are not the same to the sum of all rearward forces.



AF460. Which is true regarding the use of flaps during level turns? (Aerodynamics of flight) COM204

- a. The raising of flaps decreases the stall speed.
- b. The lower of flaps increase the stall speed.
- c. The raising of flaps increases the stall speed.



AF461. In small airplanes, normal recovery from spins may become difficult if the. (Aerodynamics of flight) COM225

- a. CG is too far forward, and rotation is around the Vertical axis.
- b. CG is too far rearward, and rotation is around the CG.
- c. CG is too far forward, and rotation is around the longitudinal axis.

AF462. Recovery from a stall in any airplane becomes more difficult when it's? (Aerodynamics of flight) COM226 PLT240

- a. Center of gravity move aft
- b. Center of gravity moves forward
- c. Center of gravity

AF463. The angle of attack at which an airplane wing stalls will? (Aerodynamics of flight) PVTASA 3311 PLT168

- a. Increase if the CG is moved forward.
- b. Change with an increase in gross weight.
- c. Remain the same regardless of gross weight.

AF464. As altitude increases, the indicated airspeed at which a given airplane stalls in a particular configuration will? (Aerodynamics of flight) PVTASA 3263 PLT477

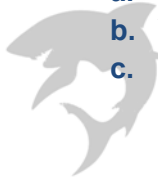
- a. Decrease as the true airspeed increases.
- b. Decrease as the true airspeed decreases
- c. Remain the same regardless of altitude.

AF465. Stall speed is effected by? (Aerodynamics of flight) com217 PLT477

- a. Angle of attack, weight, and air density.
- b. Load factor, angle of attack, and power.
- c. Weight, load factor, and power.

AF466. The stalling speed of an airplane is most effected by. (Aerodynamics of flight) COM231 PLT477

- a. Variations in flight altitude
- b. Variations in airplane loading
- c. Change in air density



AF467. **An airplane will stall at the same.** (Aerodynamics of flight) COM232 PLT477

- a. Angle of attack and altitude with relation to the horizon
- b. Angle of attack regardless of the altitude with relation to the horizon.
- c. Airspeed regardless of the altitude with relation to the horizon.



AF468. **Airplane leaving ground effect will.** (Aerodynamics of flight) COM229 PLT131

- a. Require a lower angle of attack to maintain the same lift coefficient
- b. Experience a reduction in ground friction and require a slight power reduction.
- c. Experience an increase in induced drag and require more thrust

AF469. **If the same angle of attack is maintained in ground effect as when out ground effect, lift will.**

(Aerodynamics of flight) COM233 PLT131

- a. Decrease and parasite drag will decrease.
- b. Increase and induced drag will decrease.
- c. Increase, and induce drag will increase.

AF470. **Ground effect is most likely to result in which problem?** (Aerodynamics of flight) PVTASA3315 PLT131

- a. Becoming airborne before reaching recommended takeoff speed.
- b. Settling to the surface abruptly during landing.
- c. Inability to get airborne even though airspeed is sufficient for normal takeoff needs.

AF471. **What is ground effect?** (Aerodynamics of flight) PVTASA3312 PLT131

- a. The result of the interference of the surface of the earth with the airflow patterns about an airplane.
- b. The result of an alteration in airflow patterns increasing induced drag about the wings of an airplane.
- c. The result of the disruption of the airflow patterns about the wing of an airplane to the point where the wings will no longer support the airplane in flight.

AF472. **Floating caused by the phenomenon of ground effect will most realized during an approach to land when at.** (Aerodynamics of flight) PVTASA3313 PLT131

- a. Twice the length of the wingspan above the surface.
- b. A higher-than-normal angle of attack
- c. Less than the length of the wingspan above the surface.

AF473. **During a takeoff made behind a departing large jet airplane, the pilots can minimize the hazard of wingtip vortices by.** (Aerodynamics of flight) SPI0096 PLT509 COM

- a. Remaining below the jet's flight path until able clear of this wake
- b. Extending the takeoff roll and not rotating until well beyond the jet's rotation point
- c. Being airborne prior to reaching the jet's flight path until able to turn clear of its wake

AF474. To avoid possible wake turbulence from a large jet aircraft that has just landed prior to your takeoff, at which point on the runway should you plan to become airborne? (Aerodynamics of flight) PLT509 COM680



- a. At the point where the jet touched down, or just prior to this point.
- b. Past the point where the jet touched down.
- c. Approximately 500 feet prior to the point where the jet touched down

AF475. Wingtip vortices are created only when an aircraft is. (Aerodynamics of flight)PVTASA3824 PLT509

- a. Operating at high airspeeds
- b. Heavily loaded.
- c. Developing lift.

AF476. How does the wake turbulence vortex circulate around each wingtip? (Aerodynamics of flight)PVTASA3829-3 PLT509

- a. Inward, upward, and around each tip.
- b. Inward, upward, and counterclockwise.
- c. Outward, upward, and around each tip.

AF477. What is the purpose of the rudder on an airplane? (Aerodynamics of flight)PLT234 PVTASA3213

- a. To control overbanking tendency.
- b. To control yaw.
- c. To control roll.

AF478. An airplane said to be inherently stable will. (Aerodynamics of flight)PLT213 PVTASA3210

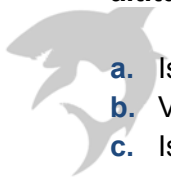
- a. Be difficult to stall
- b. Require less effort to control.
- c. Not spin.

AF479. What determines the longitudinal stability of an airplane? (Aerodynamics of flight)PLT213 PVTASA3211

- a. The location of the CG with respect to the center of lift
- b. The effectiveness of the horizontal stabilizer, rudder, and rudder trim tab.
- c. The relationship of thrust and lift to weight and drag.

AF480. For a given angle of bank, in any airplane, the load factor imposed in a coordinated constant-altitude turn. (Aerodynamics of flight)COM176 PLT309

- a. Is constant and the stall increases.
- b. Varies with the rate of turn.
- c. Is constant and the stall speed decreases.



AF481. **While holding the angle of bank constant in a level turn, if the rate of turn is varied the load factor would.** (Aerodynamics of flight)COM182 PLT309

- a. Vary depending upon the resultant lift vector
- b. Remain constant regardless of air density and the resultant lift vector
- c. Vary depending upon speed and air density provided the resultant lift vector varies proportionately

AF482. **Propeller efficiency is the** (Aerodynamics of flight)COM246 PLT351

- a. Actual distance a propeller advances in one revolution.
- b. Ratio thrust horsepower to break horse power.
- c. Ratio of geometric pitch of effective pitch.

AF483. **The reason for variations in geometric pitch (twisting) along a propeller blade is that it** (Aerodynamics of flight)COM248 PLT351

- a. Permits a relatively constant angle of attack along its length when in cruising flight.
- b. Prevents the portion of the blade near the hub from stalling during cruising flight.
- c. Permits a relatively constant angle of incidence along its length when is cruising flight

AF484. **A propeller rotating clockwise as seen from the rear, creates a spiraling slipstream. The spiraling slipstream, along with torque effect, tends to rotate the airplane to the** (Aerodynamics of flight) COM249 PLT351

- a. Right around the vertical axis, and to the left around the longitudinal axis.
- b. Left around the vertical axis, and to the left around the longitudinal axis.
- c. Left around the vertical axis, and to the right around the longitudinal axis.

AF485. **What performance is characteristic of flight at maximum lift/drag ratio in a propeller-driven airplane? Maximum** (Aerodynamics of flight) COM234 PLT351

- a. Coefficient of lift and minimum coefficient of drag.
- b. Range and maximum distance glide.
- c. Gain in altitude over a given distance.

AF486. **Longitudinal stability involves the motion of the airplane controlled by its.** (Aerodynamics of flight) COM242 PLT480

- a. Ailerons
- b. Rudder.
- c. Elevator.



- Weather theory.

WT1101. Inside the troposphere, the temperature decreases at a rate of about 2 °Celsius (C) every 1,000 feet of altitude gain, and the pressure decreases at a rate. (Weather Theory)

- a. 1" per 100 feet of altitude
- b. 1.5" per 10000 feet of altitude
- c. .1" per 1000 feet of altitude.
- d. _____

WT1102. The vast majority of weather, clouds, storms, and temperature variances occur within this first layer of the atmosphere (troposphere), and extends. (Weather Theory)

- a. Extends from sea level up to 20,000 feet over the northern and southern poles and up to 48,000 feet over the equatorial regions.
- b. Extends from sea level up to 48,000 feet over the northern and southern poles and up to 20,000 feet over the equatorial regions.
- c. Extends from sea level up to 20,000 feet over the northern and southern poles and up to 48,000 feet over the equatorial regions.

WT1103. Because the Earth has a curved surface that rotates on a tilted axis while orbiting the sun, the equatorial regions of the Earth receive a greater amount of heat from the sun than the Polar Regions. The amount of sun that heats the Earth depends on. (Weather Theory)

- a. The time of year in the region.
- b. The altitude in the region.
- c. The time of year and the latitude of the specific region.

WT1104. Moisture that has condensed from water vapor. Usually found on cooler objects near the ground, such as grass, as the near-surface layer of air cools faster than the layers of air above it. (Weather Theory)

- a. Temperature
- b. Frost
- c. Dew

WT1105. This force is not perceptible to humans as they walk around because humans move slowly and travel relatively short distances compared to the size and rotation rate of the Earth. The magnitude of this force also differs with the speed of the moving body—the greater the speed, the greater the deviation. (Weather Theory)

- a. Pressure force.
- b. Coriolis force.
- c. Gravity force.

WT1106. These standard conditions are the basis for certain flight instruments and most aircraft performance data. Standard sea level pressure is defined as 29.92 "Hg and a standard temperature of 59 °F (15 °C). Atmospheric pressure is also reported in millibars (mb), with 1 "Hg equal to approximately 34 mb. Standard sea level pressure is 1,013.2 mb. (Weather Theory)

- a. Regular atmosphere.
- b. ASI
- c. Density altitude.
- d. _____

WT1107. As altitude increases, atmospheric pressure decreases. On average, with every 1,000 feet of increase in altitude, the atmospheric pressure decreases. (Weather Theory)

- a. 1.05"Hg
- b. 2.0" Hg
- c. 1.005"Hg
- d. _____

WT1108. In the Northern Hemisphere, the flow of air from areas of high to low pressure is deflected to the right and produces a clockwise circulation around an area of high pressure. This is known as.

(Weather Theory)

- a. Cyclonic circulation
- b. Anticyclonic circulation.
- c. Regular circulation.

WT1109. Convective currents close to the ground can affect a pilot's ability to control the aircraft. For example, on final approach, the rising air from terrain devoid of vegetation sometimes produces a ballooning effect that can cause a pilot to overshoot the intended landing spot. On the other hand, an approach over a large body of water or an area of thick vegetation tends to. (Weather Theory)

- a. Land sideways of the runway
- b. Create a sinking effect that can cause an unwary pilot to land short of the intended landing spot.
- c. Create a sinking effect that can cause an unwary pilot to land beyond of the intended landing spot

WT1110. Name the sudden, drastic shift in wind speed, direction, or both that may occur in the horizontal or vertical plane. (Weather Theory)

- a. Vertical Wind.
- b. Horizontal Wind.
- c. Wind shear.

WT1111. In general, the most severe type of low-level wind shear is associated with convective precipitation or rain from thunderstorms. One critical type of shear associated with convective precipitation is known as. (Weather Theory)

- a. Microburst.
- b. Wind shear
- c. Vertical Wind.

WT1112. A series of anemometers, placed around the airport, form a net to detect changes in wind speeds. When wind speeds differ by more than 15 knots, a warning for wind shear is given to pilots. This system is known as. (Weather Theory)

- a. WAS
- b. LLWAS
- c. ATIS

WT1113. This type of fog is common over bodies of water during the coldest times of the year. Low-level turbulence and icing are commonly associated with this type of fog. (Weather Theory)

- a. Upslope Fog.
- b. Radiation Fog.
- c. Steam Fog.

WT1114. An extensive body of air having fairly uniform properties of temperature and moisture. (Weather Theory)

- a. Front.
- b. Thunderstorm.
- c. Air mass.

WT1115. Is the lowest layer of clouds reported as being broken or overcast, or the vertical visibility into an obscuration like fog or haze? (Weather Theory)

- a. Ceiling
- b. Cloud height
- c. Air mass

WT1116. Cloud consisting of numerous minuscule water droplets based at the surface. Droplets are small enough to be suspended in the earth's atmosphere indefinitely. (Weather Theory)

- a. Dew
- b. Fog
- c. Frost

WT1117. On cool, calm nights, the temperature of the ground and objects on the surface can cause temperatures of the surrounding air to drop below the dew point. When this occurs, the moisture in the air condenses and deposits itself on the ground, buildings, and other objects like cars and aircraft. This moisture is known as. *(Weather Theory)*

- a. Fog
- b. Frost
- c. Inversion
- d. _____

WT1118. Occurs when moist, stable air is forced up sloping land features like a mountain range. This type of fog also requires wind for formation and continued existence. *(Weather Theory)*

- a. Upslope Fog
- b. Radiation Fog
- c. Ground Fog

WT1119. Are the types of clouds form around 6,500 feet AGL and extend up to 20,000 feet AGL. They are composed of water, ice crystals, and supercooled water droplets. This type of cloud includes altostratus clouds and altocumulus. *(Weather theory)*

- a. Middle clouds
- b. Low Clouds
- c. High Clouds

WT1120. Cloud consisting of numerous minute water droplets and based at the surface; droplets are small enough to be suspended in the earth's atmosphere indefinitely. *(Weather theory)*

- a. Frost
- b. Dew
- c. Fog
- d. _____

WT1121. Type of cloud that form above 20,000 AGL and usually form only in stable air. They are made up of ice crystals and poses no real threat of turbulence or icing. Typical high level clouds are cirrus, cirrostratus, and cirruscumulus. *(Weather theory)*

- a. Low Clouds
- b. High Fog
- c. Clouds with extensive vertical development.
- d. _____

WT1122. As the sun rises and the temperature increases, radiation fog lifts and eventually burns off. Any increase in wind also speeds the dissipation of radiation fog. If radiation fog is less than 20 feet thick, it is known as. (Weather theory)

- a. Radiation Fog.
- b. Breeze.
- c. Ground Fog.

WT1123. Occurs in cold weather when the temperature is much below freezing and water vapor forms directly into ice crystals. Conditions favorable for its formation are the same as for radiation fog except for cold temperature, usually -25 °F or colder. It occurs mostly in the arctic regions, but is not unknown in middle latitudes during the cold season. (Weather theory)

- a. Ground Fog
- b. Radiation Fog
- c. Advection Fog
- d. _____

WT1124. Winds of up to 15 knots allow the fog to form and intensify; above a speed of 15 knots, the fog usually lifts and forms low stratus clouds. It is common in coastal areas where sea breezes can blow the air over cooler landmasses. (Weather theory)

- a. Radiation Fog.
- b. Ice Fog.
- c. Advection Fog.

WT1125. Are the types of clouds that form near the Earth's surface and extend up to 6,500 feet AGL. They are made up primarily of water droplets, but can include supercooled water droplets that induce hazardous aircraft icing. (Weather theory)

- a. Low clouds
- b. High clouds
- c. Middle clouds

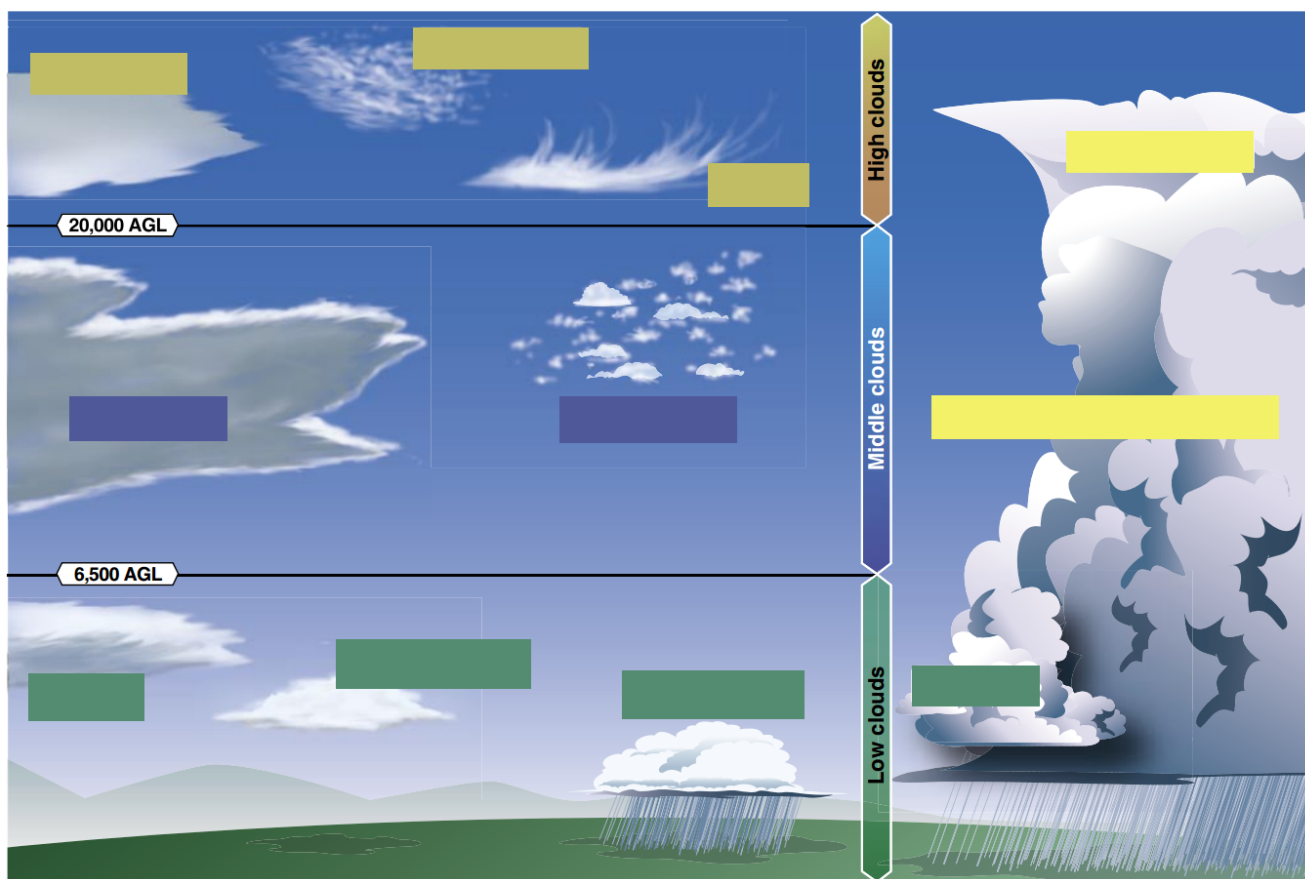
WT1126. These extensive vertical clouds can be obscured by other cloud formations and are not always visible from the ground or while in flight. When this happens, these clouds are said to be. (Weather theory)

- a. Low Clouds
- b. Fog
- c. Emendded

WT1127. Refers to the greatest horizontal distance at which prominent objects can be viewed with the naked eye. (Weather theory)

- a. RVR
- b. Minimums
- c. Visibility

- Clouds Types



- a. STRATUS
- b. NIMBOSTRATUS
- c. ALTOCUMULUS
- d. CIRRUS
- e. CIRRUSTRATUS
- f. ALTOSTRATUS

- g. STRATOCUMULUS
- h. CUMULUS
- i. ALTOSTRATUS
- j. CIRRUCUMULUS
- k. CUMULONIMBUS
- l. Clouds with vertical development



WT1128. Are classified as very small water droplets, smaller than 0.02 inches in diameter. usually accompanies fog or low stratus clouds. (Weather theory)

- a. Rain
- b. Snow
- c. Drizzle

WT1129. If rain falls through a temperature inversion, it may freeze as it passes through the underlying cold air and fall to the ground and are an indication of a temperature inversion and that freezing rain exists at a higher altitude. (Weather theory)

- a. Freezing rain
- b. Ice pellets
- c. Drizzle

WT1130. Rain that falls through the atmosphere but evaporates prior to striking the ground is known as. (Weather theory)

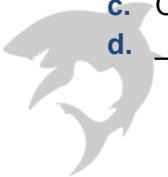
- a. Snow
- b. Rain
- c. Drizzle
- d. _____

WT1131. freezing water droplets are carried up and down by drafts inside clouds, growing larger in size as they come in contact with more moisture. Once the updrafts can no longer hold the freezing water, it falls to the Earth. (Weather theory)

- a. Rain
- b. Hail
- c. Snow

WT1132. Are classified according to the regions where they originate. They are large bodies of air that take on the characteristics of the surrounding area, or source region. (Weather theory)

- a. Front
- b. Thunderstorm
- c. Occluded Front
- d. _____



WT1133. There are four types of fronts, which are named according to the temperature of the advancing air relative to the temperature of the air it is replacing: (Weather theory)



- a. Rain, Hail, Snow, Drizzle
- b. Cold, Stationary, Occluded, Warm.
- c. Cold, Occluded, Drizzle, Snow.

WT1134. Warm fronts contain warm airs that often have very high humidity. As the warm air is lifted, the temperature drops and condensation occurs. Warm fronts move slowly, typically. (Weather theory)

- a. 15 Mph
- b. 20 Mph
- c. 18 Mph
- d. All

WT1135. The boundary between two air masses where cold air is replacing warm air. (Weather theory)

- a. Warm Front
- b. Occluded Front
- c. Stationary Front
- d. _____

WT1136. The cold front it is so dense, it stays close to the ground and acts like a snowplow, sliding under the warmer air and forcing the less dense air aloft. The rapidly ascending air causes the temperature to decrease suddenly, forcing the creation of clouds. The type of clouds that form depends on. (Weather theory)

- a. Ambient lapse rate
- b. Stability of the colder air mass
- c. Stability of the warmer air mass

WT1137. When the forces of two air masses are relatively equal, the boundary or front that separates them remains stationary and influences the local weather for days. (Weather theory)

- a. Cold Front
- b. Stationary Front
- c. Occluded Front
- d. _____



WT1138. Occurs when a fast moving cold front catches up with a slow moving warm front. The difference in temperature within each frontal system is a major factor in determining whether a cold or warm front occlusion occurs. [\(Glossary\)](#)



- a. Cold Front
- b. Wind Shifts
- c. Occlude Fronts

WT1139. The line may be too long to detour easily and too wide and severe to penetrate. It often contains steady-state and presents the single most intense weather hazard to aircraft. [\(Weather theory\)](#)

- a. Tornadoes
- b. Squall Line
- c. Thunderstorm

WT1140. The strong winds gather dust and debris and the low pressure generates a funnel-shaped cloud extending downward from the cumulonimbus base. If the cloud does not reach the surface, it is a.

[\(Weather theory\)](#)

- a. Tornadoes
- b. Funnel Clouds
- c. Squall line

WT1141. Which is true with respect to a high- or low-pressure system? [\(Weather theory\)](#) PLT517 COM313

- a. A high-pressure area or ridge is an area of rising air.
- b. A high-pressure area or ridge is an area of descending air.
- c. A low-pressure area or trough is an area of descending air.





FOR TRAINING PURPOSES ONLY



- Principles of Flight.

- PF301. **Principle that explains how the pressure of a moving fluid varies with its speed of motion. An increase in the speed of movement causes a decrease in the fluid's pressure.** (Principles of Flight)
- a. Bypass
 - b. Bernoulli's
 - c. Newton's Third Law
- PF302. **"Every object persists in its state of rest or uniform motion in a straight line unless it is compelled to change that state by forces impressed on it."** (Principles of Flight)
- a. Newton's Second Law
 - b. Newton's Third Law
 - c. Newton's First Law
- PF303. **"For every action, there is an equal and opposite reaction."** (Principles of Flight)
- a. Newton's Second Law
 - b. Newton's Third Law
 - c. Newton's First Law
- PF304. **Lifting force produced when a rotating cylinder produces a pressure differential. This is the same effect that makes a baseball curve or a golf ball slice.** (Principles of Flight)
- a. Bernoulli's
 - b. Newton's Third Law
 - c. Magnus effect.
- PF305. **A point along the wing chord line where lift is considered to be concentrated.** (Principles of Flight)
- a. Center of gravity
 - b. Center of Pressure
 - c. Center of drag
- PF306. **The acute angle formed between the chord line of an airfoil and the direction of the air striking the airfoil.** (Principles of Flight)
- a. Angle of Attack
 - b. Angle of incidence
 - c. Chord line
- PF307. **The rapidly rotating air that spills over an airplane's wings during flight. The intensity of the turbulence depends on the airplane's weight, speed, and configuration. Also referred to as wake turbulence.** (Principles of Flight)
- a. Wing Vortices
 - b. Wing Twist
 - c. Wind shear

- PF308.** The density is decreased because density is directly proportional to pressure. If the pressure is doubled, the density is doubled; if the pressure is lowered, the density is lowered, this statement is true. (Principles of Flight)
- a. Only at constant pressure.
 - b. Only at standard temperature rate.
 - c. Only at constant temperature.
- PF309.** Increasing the temperature of a substance decreases its density. Conversely, decreasing the temperature increases the density. Thus, the density of air varies inversely with temperature. This statement is true. (Principles of Flight)
- a. Only at constant temperature.
 - b. Only at standard conditions.
 - c. Only at constant pressure.
- PF310.** An aircraft at rest on the ramp remains at rest unless a force strong enough to overcome its inertia is applied. Once it is moving, its inertia keeps moving it, subject to the various other forces acting on it. (Principles of Flight)
- a. Newton's Second Law
 - b. Newton's Third Law
 - c. Newton's First Law
- PF311.** Is the resistance which surface or object encounters when moving over another and exists between a fluid and the surface over which it flows. (Principles of Flight)
- a. Viscosity
 - b. Friction
 - c. Pressure
- PF312.** An airfoil with a positive Angle of attack develops air circulation about the upper surface of the wing. Its sharp trailing edge forces the rear stagnation point to be aft of the trailing edge, while the front stagnation point falls below the leading edge. (Principles of Flight)
- a. Newton's Second Law
 - b. Wing Theory
 - c. Magnus effect



PF313. Is a straight line drawn through the profile connecting the extremities of the leading and trailing edges. The distance from this chord line to the upper and lower surfaces of the wing denotes the magnitude of the upper and lower camber at any point. (Principles of Flight)



- a. Mean camber line
- b. Chord line
- c. Trailing line

PF314. In pressure distribution over the wing, negative pressure on the upper surface creates a relatively larger force on the wing than is caused by. (Principles of Flight)

- a. The negative pressure resulting from the air striking the lower wing surface.
- b. The positive pressure resulting from the air striking the lower wing surface.
- c. The positive pressure resulting from the air striking the upper wing surface.

PF315. An aircraft airfoil is designed to produce lift resulting from a difference in the. (Principles of Flight)

- a. Higher air pressure below the wing's surface and lower air pressure above the wing's surface.
- b. Lower air pressure below the wing's surface and higher air pressure above the wing's surface.
- c. Lower air pressure above the wing's surface and higher air pressure below the wing's surface.





FOR TRAINING PURPOSES ONLY



- Flight Manuals and Other Documents

FMD801. This book contains the information and instructions required to operate an aircraft safely. A pilot must comply with this information which is specific to a particular make and model aircraft, usually by serial number. (Flight Manuals and Other Documents)

- a. Owner/Information manual
- b. AFM/POH
- c. Checklist

FMD802. This section contains only those limitations required by regulation or that are necessary for the safe operation of the aircraft, powerplant, systems, and equipment. (Flight Manuals and Other Documents)

- a. General
- b. Weight and Balance
- c. Normal Procedures
- d. _____

FMD803. In addition to the markings listed above, small multi-engine airplanes will have a red radial line to indicate single-engine minimum controllable airspeed (VMC). A blue radial line is used to indicate. (Flight Manuals and Other Documents)

- a. Vy
- b. V1
- c. Vx
- d. _____

FMD804. A red line on the ASI shows the airspeed limit beyond which structural damage could occur. This is called. (Flight Manuals and Other Documents)

- a. VA
- b. Vy
- c. VNE

FMD805. This section describes the aircraft systems in a manner appropriate to the pilot most likely to operate the aircraft. (Flight Manuals and Other Documents)

- a. Section 2
- b. Section 7
- c. Section

FMD806. Is issued by a representative of the FAA after the aircraft has been inspected, is found to meet the requirements of 14 CFR part 21, and is in condition for safe operation. (Flight Manuals and Other Documents)

- a. Registration
- b. Airworthiness Certificate
- c. AFM

FMD807. An emergency locator transmitter (ELT) is required by 14 CFR section 91.207 and must be inspected within. (Flight Manuals and Other Documents)

- a. 24 months
- b. 12 months
- c. 48 months

FMD808. It authorizes the operation of an aircraft that does not currently meet applicable airworthiness requirements but is safe for a specific flight. (Flight Manuals and Other Documents)

- a. Airworthiness Certificate
- b. Registration.
- c. Special Flight Permit.

FMD809. Define the authority and responsibility of the Administrator for requiring the necessary corrective action. Are used to notify aircraft owners and other interested persons of unsafe conditions and to specify the conditions under which the product may continue to be operated. (Flight Manuals and Other Documents)

- a. Airworthiness certificate
- b. Airworthiness directives
- c. Special certification

FMD810. Major repairs or alterations shall be approved for return to service on FAA Form 337, Major Repair and Alteration, by an appropriately rated certificated repair station, and signed by. (Flight Manuals and Other Documents)

- a. FAA-certificated A&P mechanic
- b. Pilot in command
- c. FAA-certificated A&P mechanic holding an IA

FMD811. Is considered to be simple or minor preservation operations and the replacement of small standard parts, not involving complex assembly operations. (Flight Manuals and Other Documents)

- a. Overhaul
- b. Annual inspections
- c. Preventive maintenance

FMD812. Assuring compliance with an Airworthiness Directive is the responsibility of the. (Flight Manuals and Other Documents)COM89 PLT374

- a. Pilot in command and the FAA certificated mechanic assigned to that aircraft.
- b. Pilot in command of that aircraft.
- c. Owner or operator of that aircraft.

FMD813. Aircraft maintenance records must include the current status of the. (Flight Manuals and Other Documents)COM126 PLT425

- a. Life-limited parts of only the engine and airframe.
- b. Applicable airworthiness certificate.
- c. life-limited parts of each airframe, engine, propeller, rotor, and appliance.

FMD814. A new maintenance record being used for an aircraft engine rebuilt by the manufacturer must include previous. (Flight Manuals and Other Documents)COM128 PLT425

- a. Operating hours of the engine.
- b. Changes as required by Airworthiness Directives.
- c. Annual inspections performed on the engine.

FMD815. Who is primarily responsible for maintaining an aircraft in an airworthy condition? (Flight Manuals and Other Documents)COM117 PLT374

- a. The lead mechanic responsible for that aircraft.
- b. Owner or operator of the aircraft.
- c. Pilot in command or operator.

FMD816. The maximum cumulative time that an emergency locator transmitter may be operated before the rechargeable battery must be recharged is. (Flight Manuals and Other Documents)COM85 PLT446

- a. 60 minutes.
- b. 30 minutes.
- c. 45 minutes.

FMD817. A standard airworthiness certificate remains in effect as long as the aircraft receives. (Flight Manuals and Other Documents)COM120 PLT377

- a. An annual inspection.
- b. Required maintenance and inspections.
- c. An annual inspection and a 100-hour inspection prior to their expiration dates.

FMD818. After an annual inspection has been completed and the aircraft has been returned to service, an appropriate notation should be made. (Flight Manuals and Other Documents)COM119 PLT375

- a. On the airworthiness certificate.
- b. In the aircraft maintenance records.
- c. In the FAA-approved flight manual.

FMD819. Which is correct concerning preventive maintenance, when accomplished by a pilot? (Flight Manuals and Other Documents)COM122 PLT446

- a. Records of preventive maintenance must be entered in the FAA-approved flight manual.
- b. A record of preventive maintenance must be entered in the maintenance records.
- c. A record of preventive maintenance is not required.



- Aircraft Structures

- AST201. This force combined the load of the airplane itself, the crew, the fuel, and the cargo or baggage. It opposes lift, and acts vertically downward through the airplane's center of gravity (CG). (Aircraft Structures)
- a. Lift
 - b. Drag
 - c. Thrust
 - d. _____
- AST202. Is the forward force produced by the power plant and propeller. It opposes or overcomes the force of drag. As a general rule, it is said to act parallel to the longitudinal axis. (Aircraft Structures)
- a. Drag
 - b. Thrust
 - c. Weight
 - d. _____
- AST203. Is the specific point where the mass or weight of an aircraft may be said to be center; that is, a point around which, if the aircraft could be suspended or balanced, the aircraft would remain relatively level. (Aircraft Structures)
- a. Vertical Axis
 - b. Lateral Axis
 - c. Weight
 - d. _____
- AST204. Is produced by the dynamic effect of the air acting on the wing, and acts perpendicular to the flight path through the wing's center of lift. (Aircraft Structures)
- a. Vertical Axis
 - b. Thrust
 - c. Weight
 - d. _____
- AST205. They are airfoils attached to each side of the fuselage and are the main lifting surfaces that support the airplane in flight. (Aircraft Structures)
- a. stabilizer
 - b. Wing
 - c. Propeller
- AST206. Is the central body of an airplane designed to accommodate the crew, passengers, and cargo? It also provides the structural connection for the wings and tail assembly. (Aircraft Structures)
- a. Propeller
 - b. Monocoque
 - c. Fuselage

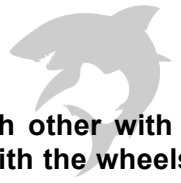
- AST207.** This surface extends from about the midpoint of each wing outward toward the tip, and move in opposite directions to create aerodynamic forces that wheel cause the airplane to roll. (Aircraft Structures)
- a. Flaps.
 - b. Fuselage.
 - c. Ailerons.
- AST208.** This tap moves in the same direction as the trailing edge of the stabilator and helps make the stabilator less sensitive. Also can be operated as a trim tab to relieve control pressures and helps maintain the stabilator in the desired position. (Aircraft Structures)
- a. Trim Tap
 - b. Wing
 - c. Empennage
 - d. _____
- AST209.** Airplanes with conventional landing gear are sometimes referred to as tail wheel airplanes. When the third wheel is located on the nose, it is called a nose wheel, and the design is referred to? (Aircraft Structures)
- a. Retractable Gear
 - b. Main Gear
 - c. Tricycle Gear.
- AST210.** For example, an aluminum beverage can support considerable forces at the opposite ends of the can, but if the side of the can is deformed slightly while supporting a load, it collapses easily. This substructure refers has? (Aircraft Structures)
- a. Semi monocoque.
 - b. Monocoque.
 - c. Fuselage.
- AST211.** This type of substructure, consists of bulkheads and/or formers of various sizes and stringers, they reinforces the stressed skin by taking some of the bending stress from the fuselage. The main section of this substructure also includes wing attachment points and a firewall. (Aircraft Structures)
- a. Semi monocoque
 - b. Monocoque
 - c. Fuselage.
- AST212.** What is the relationship of lift, drag, thrust, and weight when the airplane is in straight-and-level flight? (Aircraft Structures)PL235asa3205
- a. Lift equals weight and trust equals drag.
 - b. Lift, drag, and weight equals thrust.
 - c. Lift and weight equal thrust and drag.
- AST213.** This material has good tensile and compressive strength; good impact resistance, is easy to work with, and is relatively inexpensive and readily available. (Aircraft Structures)

- a. Carbon Fiber
- b. Fiberglass
- c. Aluminum

AST214. **This system consists of multiple pads that are hydraulically squeezed toward each other with a rotating disk between them. The pads place pressure on the rotor which is turning with the wheels.**

(Aircraft Structures)

- a. Control wheel system
- b. Brakes System
- c. Speed brakes system



- Flight Instruments

- FI701. **Is a combined system that utilizes the static air pressure, and the dynamic pressure due to the motion of the aircraft through the air.** (Flight Instruments)
- a. Pressure system
 - b. Pitot–Static System
 - c. Electrical System
- FI702. **When the pilot needs to use the alternate static system, which of the following indication he will see on the instruments.** (Flight Instruments)
- a. The ASI indicates an airspeed greater than the actual airspeed.
 - b. The VSI shows a momentary climb and then stabilizes if the altitude is held constant.
 - c. The altimeter indicates a slightly higher altitude than actual.
 - d. All
- FI703. **In an aircraft not equipped with an alternate static source, an alternate method of introducing static pressure into the system will be?** (Flight Instruments)
- a. Break the Static system
 - b. Break the glass face of the VSI
 - c. Pull out circuit break
- FI704. **Is the name that some cases will be used to name the barometric pressure window in the altimeter indicator?** (Flight Instruments)
- a. Newton's window
 - b. Kollsman window
 - c. Magnum's window
- FI705. **This instrument gives an indication of any deviation from a constant pressure level.** (Flight Instruments)
- a. Altimeter indicator.
 - b. ASI
 - c. Vertical speed indicator.
- FI706. **This valve located in the static air system that supplies reference pressure to the Altimeter, Airspeed indicator, and Vertical speed indicator, will operate if the normal static pickup becomes clogged or with ice.** (Flight Instruments)
- a. Altimeter indicator
 - b. Static system valve
 - c. Alternate Static source valve



FI707. The pressure altimeter is an aneroid barometer that measures? (Flight Instruments)

- a. The pressure of the atmosphere at the level where the surface is located, and presents an altitude indication in feet.
- b. The pressure of the atmosphere at the level where the altimeter is located, and presents an altitude indication in feet.
- c. The pressure of the atmosphere at the level where the altimeter is located, and presents an altitude indication in meters.

FI708. If an aircraft is flown from a low pressure area to a high pressure area without an adjustment of the altimeter, the actual altitude of the aircraft is? (Flight Instruments)

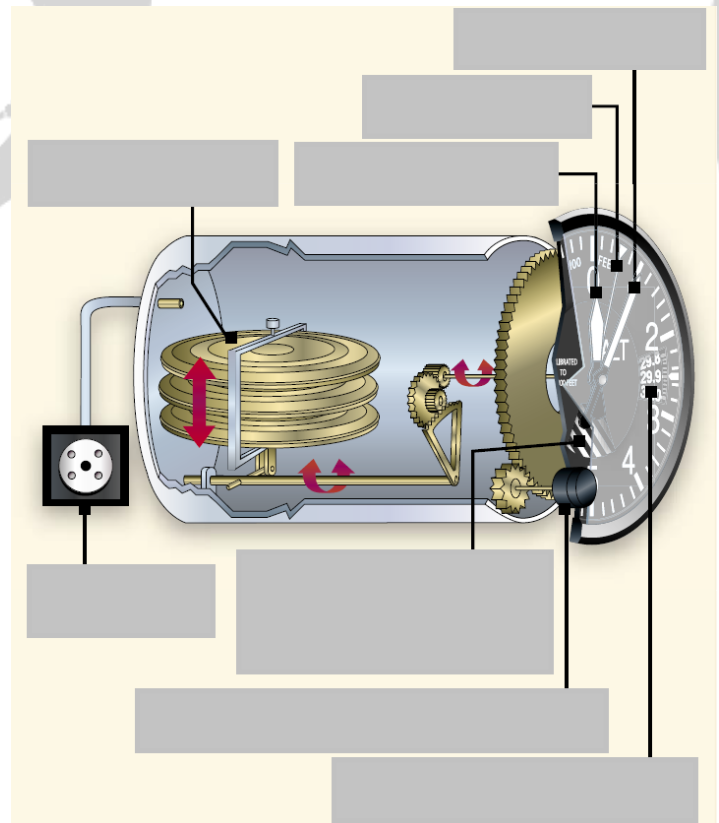
- a. Higher than the True Altitude.
- b. Higher than the Indicated altitude.
- c. Higher than the Absolute altitude.
- d. _____

FI709. If a pilot is not utilizing ATC assistance, local altimeter settings can be set by? (Flight Instruments)

- a. By monitoring local automated weather observing system
- b. By monitoring automated surface observation system (AWOS/ASOS)
- c. By monitoring automatic terminal information service (ATIS) broadcasts.
- d. _____

- Altimeter Indicator

- A. Altimeter setting window
- B. Aneroid wafers
- C. Static Port
- D. Barometric scale adjustment knob
- E. Crosshatch Flag
- F. 1,000 pointer
- G. 10,000 pointer
- H. 100 pointer



- FI710. **It refers to the altitude read on the altitude indicator which is uncorrected, after the altimeter setting is dialed into the Kollsman window.** (Flight Instruments)
- a. Absolute Altitude
 - b. Altitude above Terrain
 - c. Indicated Altitude
- FI711. **An airplane flying into a cooler air mass, is maintaining a constant indicated altitude, his true altitude will be?** (Flight Instruments)
- a. True altitude is lower.
 - b. True altitude is higher.
 - c. True altitude is equal that indicated altitude.
- FI712. **Term defined as station pressure reduced to sea level?** (Flight Instruments)
- a. Absolute altitude
 - b. True altitude
 - c. Altimeter setting
- FI713. **There are two means by which the altimeter pointers can be moved. The first is a change in air pressure and the second is?** (Flight Instruments)
- a. Move the pointer with your hand.
 - b. With the air wind
 - c. Adjustment to the barometrical scale.
- FI714. **Altitude is refers as?** (Flight Instruments)
- a. Vertical distance above some point or level used as a reference.
 - b. Vertical distance above terrain.
 - c. Vertical distance above sea level.
 - d. all
- FI715. **The elevation of Airports, terrain, and obstacles on aeronautical chart, are expressed in?** (Flight Instruments)
- a. Indicated Altitude
 - b. Absolute Altitude
 - c. True Altitude
- FI716. **Is the altitude corrected from variations of the standard temperature?** (Flight Instruments)
- a. Indicated Altitude
 - b. Absolute Altitude
 - c. Density Altitude

FI717. When conditions are standard, pressure altitude and density altitude will be? (Flight Instruments)

- a. Equal
- b. Opposed
- c. One higher and one lower

FI718. The inside of the diaphragm is connected directly to the static line of the pitot-static system. The area outside the diaphragm is also connected to the static line, but through a restricted orifice (calibrated leak). Which instrument are we referring to? (Flight Instruments)

- a. Airspeed Indicator
- b. Vertical Speed Indicator
- c. Altimeter Indicator

FI719. This term is used to define the time period from the initial change in the rate of climb, until the VSI displays an accurate indication of the new rate. (Flight Instruments)

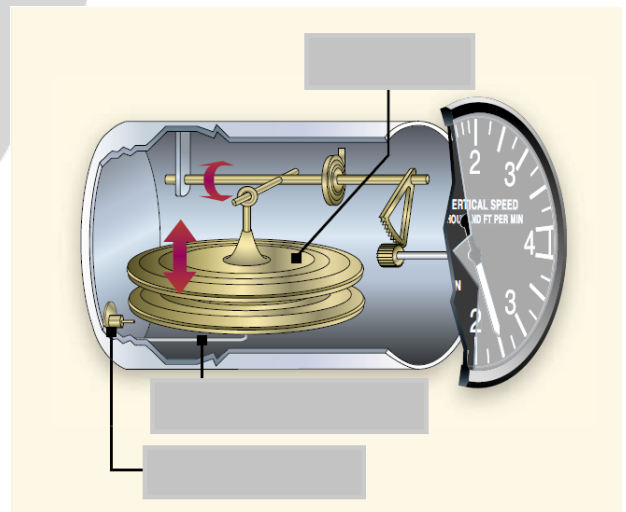
- a. Decent rate.
- b. Stabilizer rate.
- c. Lag.

FI720. Some aircraft are equipped whit this type of instrument, that incorporates accelerometers to compensate for the lag in the typical VSI. (Flight Instruments)

- a. EFIS
- b. IVSI
- c. IASI

- **Vertical Speed Indicator**

- a. Direct static pressure
- b. Calibrated leak
- c. Diaphragm



FI721. This instrument is a sensitive differential pressure gauge which measures and indicates the difference between dynamic pressure and static pressure. (Flight Instruments)

- a. Altimeter
- b. Vertical Speed indicator
- c. HSI
- d. _____

FI722. Is the calibrated airspeed corrected for altitude and nonstandard temperature? (Flight Instruments)

- a. Ground Speed
- b. Indicated Airspeed
- c. True Airspeed

FI723. Is the Indicated Airspeed corrected for installation error and instrument error? (Flight Instruments)

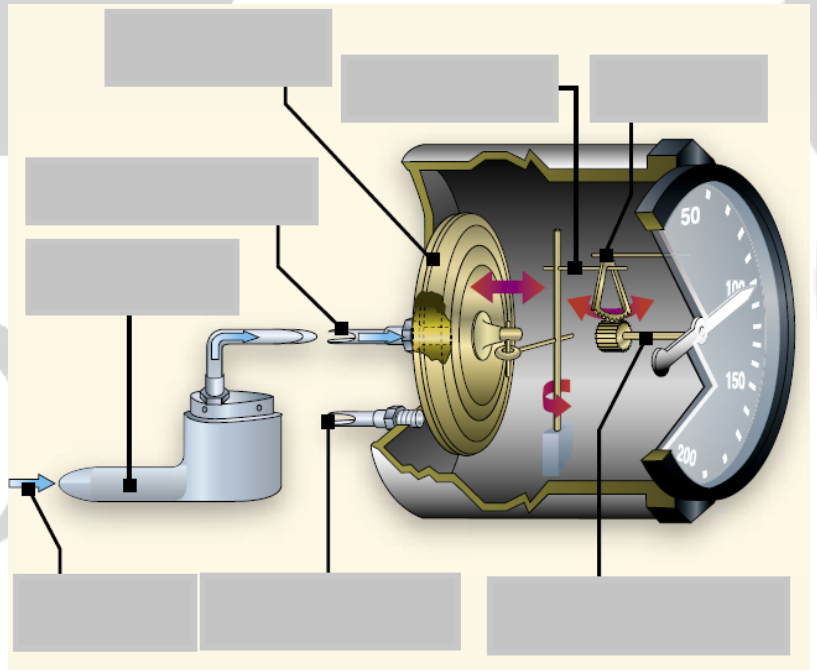
- a. Indicated Airspeed
- b. Calibrated Airspeed
- c. True airspeed

FI724. Calibrated Airspeed and Indicated Airspeed will be approximately the same value at? (Flight Instruments)

- a. Lower airspeed
- b. Higher airspeed
- c. Lower Pressure

- Airspeed Indicator

- a. Diaphragm
- b. Longer level
- c. Ram air
- d. Pitot tube
- e. Pitot connection
- f. Sector
- g. Handstaff pinion
- h. Static air line



FI725. Which range is the upper limit of the green arc in the airspeed indicator? (Flight Instruments)

- a. Normal operating range
- b. Maximum structural cruising speed
- c. Minimum steady flight speed

- FI726. If the pitot tube becomes blocked and its associated drain hole remains clear, ram air no longer is able to enter the pitot system. Air already in the system vents through the drain hole, and the remaining pressure drops to ambient (outside) air pressure. Under these circumstances the ASI reading will be? (Flight Instruments)
- a. The actual airspeed.
 - b. Decrease to zero.
 - c. Increased.
- FI727. What can a pilot expect if the pitot system ram air input and drain hole are blocked by ice? (Flight Instruments) ATP892PLT001
- a. The airspeed indicator may act as an altimeter.
 - b. No airspeed indicator change will occur during climbs or descents.
 - c. The airspeed indicator will show a decrease with an increase in altitude.
- FI728. Which instrument will become inoperative if the pitot tube becomes clogged? (Flight Instruments) ASAPVT3248PLT337
- a. Altimeter
 - b. Vertical speed
 - c. Airspeed
- FI729. Which instrument(s) will become inoperative if the static vents become clogged? (Flight Instruments) ASAPVT3249PLT337
- a. Airspeed only.
 - b. Altimeter only.
 - c. Airspeed, altimeter, and vertical speed
- FI730. The pitot system provides impact pressure for which instrument? (Flight Instruments) ASAPVT32629PLT337
- a. Altimeter
 - b. Vertical-speed indicator.
 - c. Airspeed indicator.
- FI731. What is an important airspeed limitation that is not color coded on airspeed indicators? (Flight Instruments) ASAPVT32749PLT278
- a. Never – exceed speed.
 - b. Maximum structural cruising speed
 - c. Maneuvering speed
- FI732. Altimeter setting is the value to which the barometric pressure scale of the altimeter is set so the altimeter indicates. (Flight Instruments) ASAPVT3254PLT041
- a. Calibrated altitude at field elevation.
 - b. Absolute altitude at field elevation.
 - c. True altitude at field elevation.

FI733. **How do variations in temperature affect the altimeter?** (Flight Instruments) ASAPVT3255PLT165

- a. Pressure levels are raised on warm day and the indicated altitude is lower than true altitude.
- b. Higher temperatures expand the pressure levels and the indicated altitude is higher than true altitude.
- c. Lower temperatures lower the pressure levels and the indicated altitude is lower than true altitude.

FI734. **What is absolute altitude?** (Flight Instruments) ASAPVT3257PLT023

- a. The altitude read directly from the altimeter
- b. The vertical distance of the aircraft above the surface
- c. The height above the standard datum plane.

FI735. **What is true altitude?** (Flight Instruments) ASAPVT3256PLT023

- a. The vertical distance of the aircraft above sea level
- b. The vertical distance of the aircraft above the surface.
- c. The height above the standard datum plane.

FI736. **What is pressure altitude?** (Flight Instruments) ASAPVT3259PLT023

- a. The indicated altitude corrected for position and installation error.
- b. The altitude indicated when the barometric pressure scale is set to 29.92
- c. The indicated altitude corrected for nonstandard temperature and pressure.

FI737. **If the static system becomes blocked but the pitot tube remains clear, the ASI continues to operate; however, it is inaccurate. When operating at a lower altitude the ASI reading will be?** (Flight Instruments)

- a. Faster than actual airspeed is displayed due to the relatively low static pressure trapped in the system.
- b. Lower than actual airspeed is displayed due to the relatively low static pressure trapped in the system.
- c. Faster than actual airspeed is displayed due to the relatively low dynamic pressure trapped in the system.

FI738. **Under what condition is indicated altitude the same as true altitude?** (Flight Instruments) ASAPVT3260PLT023

- a. If the altimeter has no mechanical error.
- b. When at sea level under standard conditions.
- c. When at 18,000 feet MSL with the altimeter set at 29.92

FI739. **If it is necessary to set the altimeter from 29.15 to 29.85, what change occurs?** (Flight Instruments) ASAPVT3261PLT166

- a. 70-foot increase in indicated altitude
- b. 70-foot increase in density altitude.
- c. 700 foot increase in indicated altitude.

FI740. **Any spinning object exhibits gyroscopic properties. A wheel or rotor designed and mounted to utilize these properties is called?** (Flight Instruments)

- a. Flight instruments
- b. Precession
- c. Gyroscope

- FI741. **Are the two fundamental properties of gyroscopic action.** (Flight Instruments)
- a. Gravity and centrifugal force.
 - b. Rigidity in space and precession.
 - c. First and second Newton's law
- FI742. **Refers to the principle that a gyroscope remains in a fixed position in the plane in which it is spinning.** (Flight Instruments)
- a. Precession
 - b. Gyroscope
 - c. Rigidity in space
- FI743. **The reaction to this force does not occur at the point at which it was applied; rather, it occurs at a point that is 90° later in the direction of rotation.** (Flight Instruments)
- a. Rigidity in space
 - b. Precession
 - c. Gravity
- FI744. **This system spins the gyro by drawing a stream of air against the rotor vanes to spin the rotor at high speed, much like the operation of a waterwheel or turbine?** (Flight Instruments)
- a. Pitot – Static System
 - b. Vacuum System
 - c. Autopilot System
- FI745. **A turn coordinator provides an indication of the.** (Flight Instruments)ASAPVT3275PLT187
- a. Movement of the aircraft about the yaw and roll
 - b. Angle of bank up to but not exceeding 30°
 - c. Altitude of the aircraft with reference to the longitudinal axis
- FI746. **Deviation in a magnetic compass is caused by the.** (Flight Instruments)ASAPVT32795PLT215
- a. Presence of flaws in the permanent magnets of compass.
 - b. Difference in the location between true north and magnetic north.
 - c. Magnetic field within the aircraft distorting the lines of magnetic force
- FI747. **The angular difference between true north and magnetic north is.** (Flight Instruments)ASAPVT3279-15PLT320
- a. Magnetic deviation.
 - b. Magnetic variation.
 - c. Compass acceleration error.
- FI748. **In the Northern Hemisphere, a magnetic compass will normally indicate a turn toward the north if.** (Flight Instruments)ASAPVT3282PLT215
- a. an aircraft is decelerated while on an east or west heading.
 - b. a left turn is entered from a west heading.
 - c. an aircraft is accelerated while on an east or west heading

FI749. In the Northern Hemisphere, the magnetic compass will normally indicate a turn toward the south when. (Flight Instruments)ASAPVT3283PLT215

- a. a left turn is entered from an east heading.
- b. a right turn is entered from a west heading.
- c. the aircraft is decelerated while on a west heading.



FI750. During flight, when are the indications of a magnetic compass accurate? (Flight Instruments)ASAPVT3286PLT215

- a. Only in straight-and-level unaccelerated flight.
- b. As long as the airspeed is constant.
- c. During turns if the bank does not exceed 18°.



- Aircraft Performance

- AP101. Since it is a fluid substance, this force is exerted equally in all directions, and its effect on bodies within the air is called pressure. Under standard conditions at sea level, the average pressure exerted by the weight of the atmosphere is approximately. (Aircraft Performance)
- a. 14 Psi
 - b. 15 Psi
 - c. 14.7 Psi
- AP102. A standard temperature lapse rate is one in which the temperature decreases at the rate of approximately 3.5 °F or 2 °C per thousand feet up to. (Aircraft Performance)
- a. 35,000 Feet
 - b. FL360
 - c. 80,000 Feet
- AP103. The standard atmosphere at sea level is a surface temperature of 59 degrees Fahrenheit (°F) or 15 degrees Celsius (°C) and a surface pressure of. (Aircraft Performance)
- a. 29.90"
 - b. 29.91"
 - c. 1013.2 Mb
- AP104. A standard pressure lapse rate is one in which pressure decreases at a rate of approximately. (Aircraft Performance)
- a. 2" Hg per 10,000
 - b. 1" Hg per 1,000
 - c. 1.5 " Hg per 2,000
 - d. _____
- AP105. Air density is affected by changes in altitude, temperature, and humidity. High density altitude refers to thin air while low density altitude refers to. (Aircraft Performance)
- a. Absolute air
 - b. Thin air
 - c. Dense air
- AP106. Density altitude is determined by first finding pressure altitude, and then correcting this altitude for. (Aircraft Performance)
- a. Standard temperature
 - b. Nonstandard temperature
 - c. ISA

- AP107.** Refers to the amount of water vapor contained in the atmosphere, and is expressed as a percentage of the maximum amount of water vapor the air can hold. This amount varies with the temperature; warm air can hold more water vapor, while colder air can hold less. [\(Aircraft Performance\)](#)
- a. Temperature
 - b. Density
 - c. Relative humidity
- AP108.** Pressure altitude corrected for nonstandard temperature. This altitude is also used in computing the performance of an aircraft and its engines. [\(glossary\)](#)
- a. Humidity
 - b. Temperature
 - c. Density altitude
- AP109.** If an aircraft in a steady flight condition at 100 knots is then accelerated to 200 knots, the parasite drag becomes four times as great, but the power required overcoming that drag is. [\(Aircraft Performance\)](#)
- a. Four times
 - b. Two times
 - c. Eight times
- AP1010.** Work rate or units of work per unit of time, and as such is a function of the speed at which the force is developed. [\(Aircraft Performance\)](#)
- a. Force
 - b. Thrust
 - c. Power
- AP1011.** The force that imparts a change in the velocity of a mass. This force is measured in pounds but has no element of time or rate. [\(Aircraft Performance\)](#)
- a. Thrust
 - b. Force
 - c. Power
- AP1012.** When the excess thrust is zero, the inclination of the flightpath is zero, and the aircraft will be in steady, level flight. When the thrust is greater than the drag, the excess thrust will allow the airplane to. [\(Aircraft Performance\)](#)
- a. Descent
 - b. Climb
 - c. Turn
- AP1013.** Would occur where there exists the greatest difference between thrust available and thrust required; i.e., for the propeller-powered airplane, the maximum excess thrust and angle of climb will occur at some speed just above the stall speed. [\(Aircraft Performance\)](#)
- a. Climb
 - b. Maximum angle of climb
 - c. Maximum rate of climb

AP1014. Range involves consideration of flying distance, while endurance involves consideration of flying time. Thus, it is appropriate to define a separate term, specific endurance. If maximum endurance is desired, the flight condition must provide. (Aircraft Performance)

- a. Maximum fuel flow
- b. Minimum range
- c. Minimum fuel flow
- d. _____

AP1015. Total range is dependent on both fuel available and specific range. When range and economy of operation are the principal goals, the pilot must ensure that the aircraft is operated at the recommended long-range cruise condition. By this procedure, the aircraft will be capable of its. (Aircraft Performance)

- a. Minimum design-operating radius
- b. Maximum design-operating radius
- c. Maximum limits radius

AP1016. As fuel is consumed and the aircraft's gross weight decreases, the optimum airspeed and power setting may decrease, or, the optimum altitude may increase. In addition. (Aircraft Performance)

- a. The optimum specific range will increase
- b. The maximum specific range will increase
- c. The maximum specific range will decrease

AP1017. A propeller-driven aircraft combines the propeller with the reciprocating engine for propulsive power. Fuel flow is determined mainly by the shaft power put into. (Aircraft Performance)

- a. Thrust
- b. Mixture
- c. Propeller

AP1018. The most critical conditions of takeoff performance are the result of some combination of high gross weight, altitude, temperature and. (Aircraft Performance)

- a. Headwind
- b. Cross wind
- c. Unfavorable wind

AP1019. Is a result of using the aircrafts potential energy provided by one, or a combination of two factors. The first is the use of excess power above that required for level flight. A second factor is that the aircraft can tradeoff its kinetic energy and increase its potential energy by reducing its airspeed. (Aircraft Performance)

- a. Minimum climb
- b. Climb Performance
- c. Range performance

AP1020. The climb performance of an aircraft is affected by certain variables. The conditions of the aircraft's maximum climb angle or maximum climb rate occur at. (Aircraft Performance)

- a. Specific weight and variations in speed will produce variations in climb performance.
- b. Specific speeds and variations in speed will produce variations in climb performance.
- c. Specific power and variations in speed will produce variations in climb performance.



AP1021. A change in an aircraft's weight produces a twofold effect on climb performance. First, a change in weight will change the drag and the power required. (Aircraft Performance)

- a. This alters the reserve power available, which in turn, affects both the climb speed and the climb rate.
- b. This alters the reserve thrust available, which in turn, affects both the climb angle and the climb rate.
- c. This alters the reserve power available, which in turn, affects both the climb angle and the climb rate.

AP1022. Is expressed in pounds per horsepower and is obtained by dividing the total weight of the aircraft by the rated horsepower of the engine. (Aircraft Performance)

- a. Wing loading
- b. Blade loading
- c. Power loading

AP1023. Is expressed in pounds per square foot and is obtained by dividing the total weight of an airplane in pounds by the wing area (including ailerons) in square feet. (Aircraft Performance)

- a. Blade loading
- b. Wing loading
- c. Power loading

AP1024. Is expressed in pounds per square foot and is obtained by dividing the total weight of a helicopter by the area of the rotor blades. (Aircraft Performance)

- a. Power loading
- b. Blade loading
- c. Wing loading

AP1025. Flight regime in which flight at a higher airspeed requires a lower power setting and a lower airspeed requires a higher power setting in order to maintain altitude. (Glossary)

- a. Speed command region
- b. Stall margin region
- c. Reversed command region

AP1026. The amount of power that is applied to the brakes without skidding the tires is referred to as. (Aircraft Performance)

- a. Dry effectiveness

- b. Gear effectiveness
- c. Brakes effectiveness.

AP1027. An upsloping runway impedes acceleration and results in a longer ground run during takeoff. However, landing on an upsloping runway typically reduces the landing roll. A downsloping runway aids in acceleration on takeoff resulting in shorter takeoff distances. The opposite for landing is.

(Aircraft Performance)

- a. As landing on a downsloping runway increases landing distances.
- b. As landing on a downsloping runway reduces landing distances.
- c. As landing on a downsloping runway increases landing speed.

AP1028. Is a condition in which the aircraft tires ride on a thin sheet of water rather than on the runway's surface? (Aircraft Performance)

- a. Static hydroplaning
- b. Dynamic hydroplaning
- c. Hydroplaning roll

AP1029. When the runway is wet, anticipate braking problems well before landing and be prepared for hydroplaning. Opt for a suitable runway most aligned with the wind. Mechanical braking may be ineffective. (Aircraft Performance)

- a. Effective braking should be used to its fullest advantage.
- b. Reverses braking should be used to its fullest advantage.
- c. Aerodynamic braking should be used to its fullest advantage.

AP1030. Is obtained by taking off at some minimum safe speed that allows sufficient margin above stall and provides satisfactory control and initial rate of climb (Aircraft Performance)

- a. Maximum takeoff distance.
- b. Minimum takeoff distance.
- c. Maximum glide distance.

AP1031. This speed is some fixed percentage of the stall speed or minimum control speed for the aircraft in the takeoff configuration. This airspeed will be anywhere from 1.05 to 1.25 times the stall speed or minimum control speed. (Aircraft Performance)

- a. V_R
- b. Lift-off speed
- c. Rotation Speed
- d. _____

AP1032. The effect of wind on takeoff distance is large, and proper consideration also must be provided when predicting takeoff distance. The effect of a headwind is. (Aircraft Performance)

- a. Allow the aircraft to reach the lift-off speed at a lower groundspeed.
- b. Allow the aircraft to reach the lift-off speed at a greater groundspeed.
- c. Allow the aircraft to reach the lift-off speed at Best Angle of Climb.



AP1033. To obtain minimum landing distance at the specified landing speed, the forces that act on the aircraft must provide. (Aircraft Performance)

- a. Maximum deceleration during the landing roll.
- b. Minimum deceleration during the landing roll.
- c. Maximum Aerodynamic landing roll.

AP1034. The ASI reading corrected for position (or installation), or instrument error, and for adiabatic compressible flow for the particular altitude. (Aircraft Performance)

- a. Calibrated Airspeed
- b. True Airspeed
- c. Equivalent Airspeed

AP1035. The calibrated power-off stalling speed or the minimum steady flight speed at which the aircraft is controllable in the landing configuration. (Aircraft Performance)

- a. V_S
- b. V_{S1}
- c. V_{S0}

AP1036. The calibrated power-off stalling speed or the minimum steady flight speed at which the aircraft is controllable in a specified configuration. (Aircraft Performance)

- a. V_{S1}
- b. V_{S0}
- c. V_{EF}

AP1037. The highest speed permissible with the wing flaps in a prescribed extended position. This is because of the air loads imposed on the structure of the flaps. (Aircraft Performance)

- a. V_{LO}
- b. V_{NO}
- c. V_{FE}



AP1038. The maximum speed for normal operation or the maximum structural cruising speed. This is the speed at which exceeding the limit load factor may cause permanent deformation of the aircraft structure. (Aircraft Performance)

- a. V_{NE}
- b. V_{NO}
- c. V_A

AP1039. Name the maximum speed at which the aircraft can be safely flown with the landing gear extended. This is a problem involving stability and controllability. (Aircraft Performance)

- a. V_{FE}
- b. V_{LE}
- c. V_{NE}

AP1040. Critical engine failure speed or decision speed. Engine failure below this speed shall result in an aborted takeoff; above this speed the takeoff run should be continued. (Aircraft Performance)

- a. V_{EF}
- b. V_1
- c. V_2

AP1041. Minimum control speed in the air, with one engine inoperative, (critical engine on two-engine aircraft) operating engine(s) at takeoff power, maximum of 5° bank into the good engine(s). (Aircraft Performance)

- a. V_{MCG}
- b. V_{MCA}
- c. V_{MC}

AP1042. Speed at which the rotation of the aircraft is initiated to takeoff attitude. The speed cannot be less than V_1 or less than 1.05 times V_{MC} . With an engine failure, it must also allow for the acceleration to V_2 at the 35-foot height at the end of the runway. (Aircraft Performance)

- a. V_{EF}
- b. V_2
- c. V_{LOF}
- d. _____

AP1043. The takeoff safety speed which must be attained at the 35-foot height at the end of the required runway distance. This is essentially the best one-engine operative angle of climb speed for the aircraft and should be held until clearing obstacles after takeoff, or until at least 400 feet above the ground. (Aircraft Performance)

- a. V_1
- b. V_{EF}
- c. V_{FS}
- d. _____

AP1044. The distance required to accelerate to V_1 with all engines at takeoff power, experience an engine failure at V_1 , and abort the takeoff and bring the aircraft to a stop using braking action only. (Aircraft Performance)

- a. Takeoff Distance
- b. Accelerated-stop Distance
- c. Accelerated-go Distance

AP1045. The distance required to accelerate to V_1 with all engines at takeoff power, experience an engine failure at V_1 and continue the takeoff on the remaining engine(s). The runway required includes the distance required to climb to 35 feet by which time V_2 speed must be attained. (Aircraft Performance)

- a. Accelerated-go altitude
- b. Accelerated-go Distance
- c. Takeoff Distance

AP1046. The distance required to complete an all-engines operative takeoff to the 35-foot height. It must be at least 15 percent less than the distance required for a one-engine inoperative engine takeoff. This distance is not normally a limiting factor as it is usually less than the one-engine inoperative takeoff distance. (Aircraft Performance)

- a. Accelerated-go Distance
- b. Accelerated-stop Distance
- c. Takeoff Distance

AP1047. This means that the distance shown for the takeoff will include both the accelerate-go and accelerate-stop distances. (Aircraft Performance)

- a. Takeoff performance
- b. Balanced Field Length
- c. Accelerated T/O landing Performance

AP1048. This segment is the climb from the 35 foot height to 400 feet above the ground. The climb is done at full takeoff power on the operating engine(s), at V_2 speed, and with the flaps in the takeoff configuration. (Aircraft Performance)

- a. Second Segment
- b. First Segment
- c. Third Segment

AP1049. This segment is included on the takeoff runway required charts, and is measured from the point at which the aircraft becomes airborne until it reaches the 35-foot height at the end of the runway distance required. Speed initially is V_{LO} and must be V_2 at the 35 foot height. (Aircraft Performance)

- a. Third Segment
- b. Second Segment
- c. First Segment

AP1050. During this segment, the airplane is considered to be maintaining the 400 feet above the ground and accelerating from the V_2 speed to the V_{FS} speed before the climb profile is continued. The flaps are raised at the beginning of the acceleration segment and power is maintained at the takeoff setting as long as possible. (Aircraft Performance)

- a. Second Segment
- b. Acceleration Segment
- c. Fourth Segment

AP1051. This segment is from the 400 to 1,500 foot AGL altitude with power set at maximum continuous. (Aircraft Performance)

- a. Second Segment
- b. Final Acceleration Segment
- c. Third Segment
- d. _____

AP1052. 1.3 times the stalling speed in the landing configuration. This is the required speed at the 50-foot height above the threshold end of the runway. (Aircraft Performance)

- a. V_A
- b. V_{APP}
- c. V_{REF}

AP1053. The most likely conditions that would make the approach climb critical would be. (Aircraft Performance)

- a. The landings at high weights and high pressure altitudes and temperature
- b. The landings at lower weights and high pressure altitudes and temperature
- c. The landings at lower weights and lower pressure altitudes and temperature





- Flight Controls

FC501. This flight control system replaces the physical connection between pilot controls and the flight control surfaces with an electrical interface. (Flight Controls)

- a. Hydraulic System
- b. Fly-by-Wire System
- c. Electrical System

FC502. Which system constitutes Wing flaps, leading edge devices, spoilers, and trim systems? (Flight Controls)

- a. Primary system
- b. Third System
- c. Second System
- d. _____

FC503. Surfaces attached to the outboard trailing edge of each wing and move in the opposite direction from each other. (Flight Controls)

- a. Flaps
- b. Spoiler
- c. Elevator
- d. _____

FC504. Is a result of differential drag and the slight difference in the velocity of the left and right wings? (Flight Controls)

- a. Yaw
- b. Roll
- c. Adverse Yaw
- d. _____

FC505. Position decreases the camber of the elevator and creates a downward aerodynamic force, which is greater than the normal tail-down force that exists in straight-and level flight. (Flight Controls)

- a. Down – Elevator
- b. Down – Rudder
- c. Up- Elevator

FC506. Devices incorporated on the trailing edge to decrease sensitivity. They deflect in the same direction as the stabilizer. (Flight Controls)



- a. Servo
- b. Trim
- c. Elevator
- d. _____



FC507. The movable primary control surface mounted on the trailing edge of the vertical fin of an airplane. Movement of the surface rotates the airplane about its vertical axis. (glossary)

- a. Aileron
- b. Trim
- c. Flaps
- d. _____

FC508. Surface attached to the trailing edge of the wing. It increases both lift and induced drag for any given AOA. (Flight Controls)

- a. Trim
- b. Aileron
- c. Spoiler
- d. _____

FC509. Allows the aircraft to descend without gaining speed. They are also deployed to help reduce ground roll after landing. By destroying lift, they transfer weight to the wheels, improving braking effectiveness. (Flight Controls)

- a. Trim
- b. Flaps
- c. Slats
- d. _____

FC510. Are used to relieve the pilot of the need of maintaining constant pressure on the flight controls, and usually consist of flight deck controls and small hinged devices attached to the trailing edge of one or more of the primary flight control surfaces. (Flight Controls)

- a. Flaps
- b. Slats
- c. Spoiler
- d. _____

FC511. A small auxiliary hinged portion of a movable control surface that can be adjusted during flight to a position resulting in a balance of control forces. (Glossary)

- a. Trim
- b. Trim Tab

- c. spoiler
- d. _____



FC512. **One of the main function of flaps during the approach and landings is to** (Flight Controls)PLT473 COM205

- a. Decrease lift, thus enabling a steeper-than-normal approach to be made.
- b. Decrease the angle of descent without increasing the airspeed.
- c. Provide the same amount of lift at a slower airspeed.

FC513. **What is one purpose of the wing flaps?** (Flight Controls)PLT473 PVTASA3220

- a. To enable the pilot to make steeper approaches to a landing without increasing the airspeed.
- b. To relieve the pilot of maintaining continuous pressure on the controls.
- c. To decrease wing area to vary the lift.

FC514. **Which direction from the primary control surface does an anti-servo tab move?** (Flight Controls)PLT346 ATP506

- a. Same direction.
- b. Remains fixed for all positions.
- c. Opposite direction.

FC515. **Which direction from the primary control surface does the elevator adjustable trim tab moves when the control surface is move?** (Flight Controls) ATPGLEIMsub5.3-9

- a. Same direction.
- b. Opposite direction.
- c. Remains fixed for all position.

FC516. **What is the purpose of the servo tab?** (Flight Controls) ATPGLEIMsub5.3-10

- a. Move the flight controls in a event of manual reversion.
- b. Reduce control forces by deflecting in the proper direction to moves the primary flight control
- c. Prevent a control surface from moving to a full deflection position due the aerodynamic force.

FC517. **Which is a purpose of leading-edge flaps?** (Flight Controls) ATP500 GLEIMsub5-15

- a. Increase the camber of the wing.
- b. Reduce lift without increasing airspeed.
- c. Direct airflow over the top of the wing at high angle of attack.

FC518. **What affect does the leading edge slot in the wing have on performance?** (Flight Controls) ATP GLEIMsub5-17

- a. Decreases profile drag.
- b. Change the stalling angle of attack to a higher angle.
- c. Decelerates the upper surface boundary layer air.

FC519. Which is the purpose of the leading-edge slats on high-performance wings? (Flight Controls) ATP GLEIMsub5-18

- a. Increase lift at relative slow speeds
- b. Improve aileron control during low angles of attack.
- c. Direct air from the low-pressure area under the landing edge along the wing.



- Aviation Weather Services

AWS1101. Pilots also provide vital information regarding upper air weather observations and remain the only real-time source of information regarding turbulence, icing, and cloud heights. This information is gathered and filed by pilots in flight. (Aviation Weather Services)

- a. SIGMET
- b. AIRMET
- c. PIREPs

AWS1102. Provides local weather conditions and other relevant information for a radius of five miles of a specific airport. This information includes the type of report, station identifier, date and time, modifier (as required), wind, visibility, runway visual range (RVR), weather phenomena, sky condition, temperature/dew point, altimeter reading, and applicable remarks. (Aviation Weather Services)

- a. TAF
- b. SIGMET
- c. AWOS
- d. _____

AWS1103. Provides valuable information about individual airports around the country. Although the reports cover only a small radius, the pilot can generate a good picture of the weather over a wide area when many reporting stations are looked at together. (Aviation Weather Services)

- a. Radar Observation
- b. Satellite Observation
- c. Surface Observation

AWS1104. Can cover an area of at least 3,000 square miles and provides data regarding severe and extreme turbulence, severe icing, and widespread dust or sandstorms that reduce visibility to less than three miles. (Aviation Weather Services)

- a. SIGMET
- b. AIRMET
- c. TAF

AWS1105. Advisories issued only to amend the area forecast concerning weather phenomena which are of operational interest to all aircraft and potentially hazardous to aircraft having limited capability because of lack of equipment, instrumentation, or pilot qualifications. (Aviation Weather Services)

- a. TAF
- b. SIGMET
- c. PIREPs
- d. _____

AWS1106. Which types of report can be found on the Satellite Weather Products? (Aviation Weather Services)

- a. Terminal Area Forecast and Surface Aviation Weather Observation
- b. Significant Meteorological Information and Airmen's Meteorological Information
- c. Standard Briefing and Abbreviated Briefing

AWS1107. Weather advisory concerning convective weather significant to the safety of all aircraft, including thunderstorms, hail, and tornadoes. (Glossary)

- a. SIGMET
- b. Convective SIGMET
- c. AIRMET

AWS1108. Provides inflight weather briefing services, as well as scheduled and unscheduled weather broadcasts. And may also furnish weather advisories to flights within the region of authority. (Aviation Weather Services)

- a. TOWER
- b. TIBS
- c. AFSS

AWS1109. The common EFAS frequency, 122.0 MHz, is established for pilots of aircraft flying between. (Aviation Weather Services)

- a. 1000 AGL to 18,000 MSL
- b. 5000 AGL to 17500 AGL
- c. 3000 AGL to 17500 AGL
- d. _____

AWS1110. This Service is available 24 hours a day and is updated when conditions change, but it can only be accessed by a touchtone phone. The phone numbers for this service are listed in the A/FD. (Aviation Weather Services)

- a. Route Flight Advisory Service
- b. Automated Flight Service Station
- c. Transcribed Information Briefing Service

AWS1111. This broadcast includes advisories such as AIRMETS, SIGMETS, convective SIGMETS, and urgent PIREPs. They represent only a summary of the information, and pilots should contact a FSS for detailed information. (Aviation Weather Services)

- a. TIBS
- b. EFAS
- c. HIWAS

AWS1112. Is the most complete weather report and provides an overall picture. This type of briefing should be obtained prior to the departure of any flight and should be used during flight planning. (Aviation Weather Services)

- a. Outlook
- b. Abbreviated
- c. Standard

AWS1113. An overview of the larger weather picture. Fronts and major weather systems that affect the general area are provided. (Aviation Weather Services)

- a. Outlook
- b. Synopsis
- c. En route Forecast

AWS1114. Government or private facilities which provide aviation weather services. Several different government agencies, including the FAA, National Oceanic and Atmospheric Administration (NOAA), and the NWS work in conjunction with private aviation companies to provide different means of accessing weather information. (Aviation Weather Services)

- a. Weather Briefing
- b. Service Outlets
- c. Airmen's Meteorological Information

AWS1115. Briefing that should be requested when a planned departure is 6 hours or more away. It provides initial forecast information that is limited in scope due to the timeframe of the planned flight. (Aviation Weather Services)

- a. Abbreviated Briefing
- b. Standard Briefing
- c. Outlook Briefing

AWS1116. Identifier which defines a corrected report sent out to replace an earlier report that contained an error. (Aviation Weather Services)

- a. "AUTO"
- b. "AO1"
- c. "COR"

AWS1117. Reported in "Hg. In a four digit group preceded by the letter "A" (Aviation Weather Services)

- a. Sky Condition
- b. Remarks
- c. Altimeter Setting

AWS1118. Indicates a specific weather phenomenon in the vicinity of five to ten miles from the airport. (Aviation Weather Services)

- a. "BR"
- b. "VRB"
- c. "M"
- d. _____

AWS1119. Which types of reports are part of the aviation weather reports. (Aviation Weather Services)

- a. Area Forecasts, Terminal Aerodrome Forecasts
- b. Pilot Weather Reports, Radar Weather Reports
- c. SIGMET, AIRMET

AWS1120. Gives a picture of clouds, general weather conditions, and visual meteorological conditions (VMC) expected over a large area encompassing several states. This type of forecast gives information vital to en route operations, as well as forecast information for smaller airports that do not have terminal forecasts. (Aviation Weather Services)

- a. METAR
- b. Pilot Weather Reports
- c. Area Forecasts

AWS1121. IFR conditions, mountain obscurations, and thunderstorm hazards are described in this section. Statements in the Area Forecast made here regarding height are given in MSL, and if given otherwise, AGL or ceiling (CIG) will be noted. (Aviation Weather Services)

- a. Synopsis
- b. Precautionary Statements
- c. Header

AWS1122. Gives a brief summary identifying the location and movement of pressure systems, fronts, and circulation patterns in the Area Forecast. (Aviation Weather Services)

- a. Precautionary Statements
- b. Synopsis
- c. Header

AWS1123. Is the AIRMET code used to denote IFR and mountain obscuration? (Aviation Weather Services)

- a. AIRMET Zulu
- b. AIRMET Tango
- c. AIRMET Sierra

AWS1124. Is the AIRMET code used to denote icing and freezing levels? (Aviation Weather Services)

- a. AIRMET T
- b. AIRMET S
- c. AIRMET Z

AWS1125. Provides wind and temperature forecasts for specific locations in the contiguous United States, including network locations in Hawaii and Alaska. The forecasts are made twice a day based on the radiosonde upper air observations taken at 0000Z and 1200Z. (Aviation Weather Services)

- a. WST
- b. AIRMET
- c. FD

AWS1126. This chart is a computer prepared report that is transmitted every 3 hours and covers the contiguous 48 states and adjacent areas. Shows the areas of high and low pressure, fronts, temperatures, dew points, wind directions and speeds, local weather, and visual obstructions.

(Aviation Weather Services)

- a. FD
- b. Surface Analysis Chart
- c. Constant Pressure Chart

AWS1127. These charts show a modified station model that provides sky conditions in the form of total sky cover, cloud height or ceiling, weather, and obstructions to visibility, but does not include winds or pressure readings like the surface analysis chart. (Aviation Weather Services)

- a. Radar Summary Chart
- b. Weather Depiction Chart
- c. Surface Analysis Chart

AWS1128. On the weather depiction chart, a bracket (]) symbol to the right of the station indicates the observation on the station was made by ? (Aviation Weather Services)

- a. Men eye
- b. Radar
- c. Automated Station

AWS1129. This chart is published hourly at 35 minutes past the hour. It displays areas of precipitation, as well as information regarding the characteristics of the precipitation. (Aviation Weather Services)

- a. Radar Summary Chart
- b. Surface Depiction Chart
- c. Weather Depiction Chart

AWS1130. In the Radar Summary Chart, if there are no echoes detected the chart will say. (Aviation Weather Services)

- a. NA
- b. NP
- c. NE

AWS1131. Are available for low level significant weather from the surface to FL 240 (24,000 feet), also referred to as the 400 mb level, and high-level significant weather from FL 250 to FL 600 (25,000 to 60,000 feet). (Aviation Weather Services)

- a. Weather Summary Chart
- b. Surface Analysis Chart
- c. Significant Weather Prognostic Chart

AWS1132. For aviation purposes, ceiling is defined as the height above the Earth's surface of the. (Aviation Weather Services) PVTASA3463 PLT026

- a. Lowest reported obscuration and the highest layer of clouds reported as overcast.
- b. Lowest broken or overcast layer or vertical visibility into an obscuration.
- c. Lowest layer of clouds reported as scattered, broken, or thin.



AWS1133. From which primary source should information be obtained regarding expected weather at the estimated time of arrival if your destination has no Terminal Forecast? (Aviation Weather Services) PVTASA3478 PLT291

- a. Low-Level Prognostic Chart.
- b. Weather Depiction Chart.
- c. Area Forecast.

AWS1134. To best determine general forecast weather conditions over several states, the pilot should refer to. (Aviation Weather Services) PVTASA3487 PLT514

- a. Aviation Area Forecasts.
- b. Weather Depiction Charts.
- c. Satellite Maps.

AWS1135. To determine the freezing level and areas of probable icing aloft, the pilot should refer to the. (Aviation Weather Services) PVTASA3489 PLT274

- a. Inflight aviation weather advisories
- b. Weather Depiction Chart.
- c. Area Forecast.

AWS1136. What values are used for winds aloft forecasts? (Aviation Weather Services) PVTASA3505 PLT284

- a. Magnetic direction and knots.
- b. Magnetic direction and miles per hour
- c. True direction and knots

AWS1137. When the term "light and variable" is used in reference to winds aloft forecast, the coded group and windspeed is. (Aviation Weather Services) PVTASA3506 PLT284

- a. 000 and less than 7 knots
- b. 9900 and less than 5 knots
- c. 9999 and less than 10 knots



AWS1138. Radar weather reports are of special interest to pilots because they indicate. (Aviation Weather Services)

PVTASA3513 PLT353

- a. Location of precipitation along with type, intensity, and cell movement of precipitation.
- b. Location of precipitation along with type, intensity, and trend.
- c. Large areas of low ceilings and fog.



AWS1139. What information is provided by the radar summary chart that is not shown on other weather charts? (Aviation Weather Services) PVTASA3514 PLT353

- a. Lines and cells of hazardous thunderstorm.
- b. Ceilings and precipitation between reporting.
- c. Types of clouds between reporting stations.

AWS1140. What is indicated when a current CONVECTIVE SIGMET forecasts thunderstorms? (Aviation Weather Services) PVTASA3495 PLT290

- a. Moderate thunderstorm covering 30 percent of the area
- b. Moderate or severe turbulence
- c. Thunderstorms obscured by massive clouds layers.

AWS1141. SIGMETs are issued as a warning of weather conditions hazardous to which aircraft? (Aviation Weather Services) PVTASA3497 PLT290

- a. Small aircraft only.
- b. Large aircraft only.
- c. All aircraft.

AWS1142. Which in-flight advisory would contain information on severe icing not associated with thunderstorms? (Aviation Weather Services) PVTASA3498 PLT290

- a. Convective SIGMET.
- b. SIGMET.
- c. AIRMET.

AWS1143. What service should a pilot normally expect from an En Route Flight Advisory (EFAS) station? (Aviation Weather Services) PVTASA3617 PLT515

- a. Actual weather information and thunderstorm activity along route
- b. Preferential routing and radar vectoring to circumnavigate severe weather.
- c. Severe weather information, changes to flight plans, and receipt of routine position reports.



AWS1144. When telephoning weather briefing facility for preflight weather information, pilots should state.

(Aviation Weather Services) PVTASA3455 PLT514

- a. Whether they intend to fly VFR only.
- b. That they possess a current pilot certificate.
- c. The full name and address of the formation commander.



AWS1145. What should pilots state initially when telephoning a weather briefing facility for preflight weather information? (Aviation Weather Services) PVTASA3514 PLT353

FOR TRAINING PURPOSES ONLY



- **Airport Operation**

AO1301. Is a frequency designated for the purpose of carrying out airport advisory practices while operating to or from an airport without an operating control tower? (Airport Operation)

- a. ATC
- b. FSS
- c. CTAF



AO1302. Contains information such as special notices, Federal Aviation Administration (FAA) and National Weather Service (NWS) telephone numbers, preferred instrument flight rules (IFR) routing, visual flight rules (VFR) waypoints, a listing of very high frequency (VHF) omnidirectional range (VOR) receiver checkpoints, aeronautical chart bulletins, land and hold short operations (LAHSO) for selected airports, airport diagrams for selected towered airports, en route flight advisory service (EFAS) outlets, parachute jumping areas, and facility telephone numbers. (Airport Operation)

- a. Flight Plan
- b. Notam
- c. A/FD

AO1303. They provide time-critical information on airports and changes that affect the national airspace system (NAS) and are of concern to IFR operations. (Airport Operation)

- a. Flight Plan
- b. Area Forecast
- c. Notam

AO1304. Are issued by the National Flight Data Center and contain regulatory information, such as temporary flight restrictions or an amendment to instrument approach procedures. (Airport Operation)

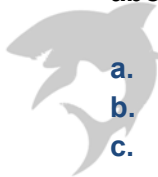
- a. NOTAM-D
- b. FDC NOTAM
- c. NOTAM-L

AO1305. Contained in the NOTAM publication, released every 28 days. (Airport Operation)

- a. NOTAM-D and NOTAM-L
- b. NOTAM-D and NOTAM-FD
- c. FDC NOTAM and NOTAM D

AO1306. This area is paved in order to provide space for an aircraft to decelerate and stop in the event of an aborted takeoff. These areas cannot be used for takeoff or landing. (Airport Operation)

- a. Displaced Threshold
- b. Stop Way
- c. Blast pad



AO1307. Certain airports have two or even three runways laid out in the same direction. These are referred to as. (Airport Operation)

- a. Center Runways
- b. Opposed Runways
- c. Parallel Runways



AO1308. Aircraft used to transition from parking areas to the runway. Are identified by a continuous yellow centerline stripe and may include edge markings. (Airport Operation)

- a. Runway
- b. Displaced Threshold
- c. Roadway
- d. _____

AO1309. Where a taxiway approaches a runway, there may be a holding position marker. These consist of? (Airport Operation)

- a. 4 White Lines (Two Solid and Two Dashed)
- b. 3 Yellow Lines (One Solid and Two Dashed)
- c. 4 Yellow Lines (Two Solid and Two Solid)
- d. _____

AO1310. These markings usually consist of a solid white line to delineate each edge of the roadway and a dashed line to separate lanes within the edges of the roadway. In lieu of the solid lines, zipper markings may be used. (Airport Operation)

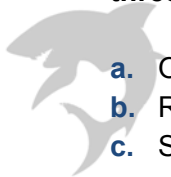
- a. Taxiway
- b. Fast Track Taxiway
- c. Vehicle roadway

AO1311. This checkpoint marking consists of a painted circle with an arrow in the middle. The arrow is aligned in the direction of the checkpoint azimuth. (Airport Operation)

- a. ILS receiver checkpoint
- b. VOR receiver checkpoint
- c. VHF Frequency Checkpoint

AO1312. Consists of a pair of synchronized flashing lights, located laterally on each side of the runway threshold, providing rapid and positive identification of the approach end of a runway. (Glossary)

- a. ODALS
- b. REIL
- c. SALS



AO1313. Signs denoted with black and yellow inscriptions surrounded by a yellow border, no arrows. They are used to identify a taxiway or runway location, to identify the boundary of the runway, or identify an instrument landing system (ILS) critical area. (Airport Operation)

- a. Mandatory instruction signs
- b. Direction signs
- c. Destination signs
- d. _____

AO1314. Yellow background with black inscription also containing arrows. These signs provide information on locating things, such as runways, terminals, cargo areas, and civil aviation areas. (Airport Operation)

- a. Destination signs
- b. Mandatory instruction signs
- c. Location signs
- d. _____

AO1315. Yellow background with black inscriptions. The inscription identifies the designation of the intersecting taxiway(s) leading out of an intersection. (Airport Operation)

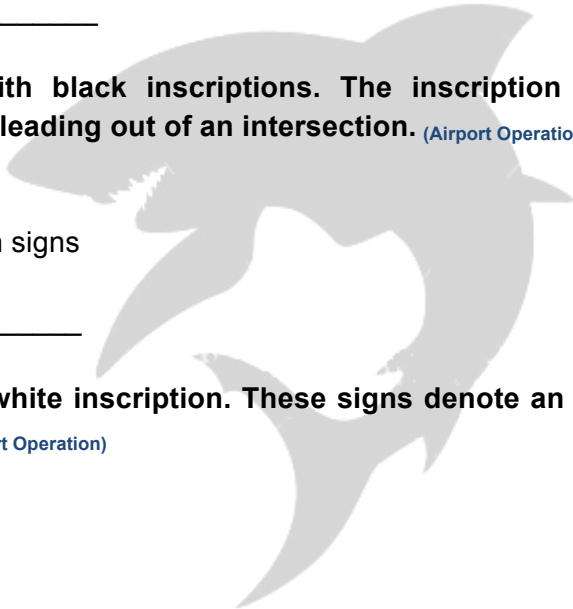
- a. Destination signs
- b. Mandatory instruction signs
- c. Location signs
- d. _____

AO1316. Red background with white inscription. These signs denote an entrance to a runway, critical area, or prohibited area. (Airport Operation)

- a. Destination signs
- b. Location signs
- c. Direction signs
- d. _____

AO1317. Black background with white numbers. The numbers indicate the distance of the remaining runway in thousands of feet. (Airport Operation)

- a. Destination signs
- b. Direction signs
- c. Mandatory instruction signs
- d. _____



AO1318. Yellow background with black inscription. These signs are used to provide the pilot with information on such things as areas that cannot be seen from the control tower, applicable radio frequencies, and noise abatement procedures. The airport operator determines the need, size, and location of these signs. (Airport Operation)

- a. Information signs
- b. Runway distance remaining signs
- c. Direction signs
- d. _____

AO1319. Are primarily intended to provide means for transition from instrument flight to visual flight for landing. The system configuration depends on whether the runway is a precision or non-precision instrument runway. (Airport Operation)

- a. ILS System
- b. PAPI System
- c. Approach Light System

AO1320. Provides obstruction clearance within 10° of the runway extended runway centerline, and to four nautical miles (NM) from the runway threshold. (Airport Operation)

- a. Visual Approach Indicator
- b. Visual Slope Indicator
- c. Visual Approach Slope Indicator

AO1321. Name the system of lights similar to the VASI, but consisting of one row of lights in two- or four-light systems. (Airport Operation)

- a. Visual Slope Indicator
- b. TriVASI
- c. PAPI
- d. _____

AO1322. Runway lighting which consists of flush centerline lights spaced at 50-foot intervals beginning 75 feet from the landing threshold. (glossary)

- a. ALSF-II
- b. Runway centerline lights
- c. Runway edge lights

AO1323. A component of the runway lighting system that is used to outline the edges of runways at night or during low visibility conditions. These lights are classified according to the intensity they are capable of producing. [\(glossary\)](#)

- a. Runway edge lights
- b. Runway Centerline lights
- c. End Runway lights

AO1324. The 3-bar system provides two glidepaths, the lower glidepath normally set at 3° and the upper glidepath ¼ degree above the lower glidepath. Two-bar VASI installations provide one visual glidepath which is normally set at? [\(Airport Operation\)](#)

- a. 3.5°
- b. 4°
- c. 2°
- d. _____

AO1325. A tri-color Visual Approach path system consists of a single light unit projecting a three-color visual approach path. [\(Airport Operation\)](#)

- a. Below the glidepath is indicated by amber, on the glidepath is indicated by green, and above the glidepath is indicated by amber.
- b. Below the glidepath is indicated by pulsating red, on the glidepath is indicated by green, and above the glidepath is indicated by white.
- c. Below the glidepath is indicated by red, on the glidepath is indicated by green, and above the glidepath is indicated by amber.

AO1326. While on the appropriate glidepath interception, steady white lights will be seen. While on a slightly below glidepath indication is a steady red light. If the aircraft descends further below the glidepath, the red light starts to pulsate, which system is referred? [\(Airport Operation\)](#)

- a. PAPI
- b. VASI
- c. PVASI

AO1327. Is a good source of information since it not only indicates wind direction, but allows the pilot to estimate the wind velocity and gusts? [\(Airport Operation\)](#)

- a. wind tee.
- b. tetrahedron.
- c. wind cone.

AO1328. Is installed to indicate the direction of landings and takeoffs when conditions at the airport warrant its use. It may be located at the center of a segmented circle and may be lighted for night operations. (Airport Operation)

- a. Tetrahedron
- b. Landing strips
- c. Wind tee

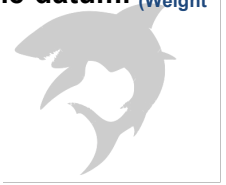


- Weight and Balance

- WB901.** The pilot should realize that if the CG is displaced too far forward on the longitudinal axis. Which condition will result? *(Weight and Balance)*
- a. Nose-heavy condition
 - b. Tail-heavy condition
 - c. Stall condition
- WB902.** The standard empty weight plus the weight of optional and special equipment that has been installed. *(Weight and Balance)*
- a. T/O weight
 - b. Basic empty weight
 - c. Taxi weight
- WB903.** The specified forward and aft points within which the CG must be located during flight. These limits are indicated on pertinent aircraft specifications. *(Weight and Balance)*
- a. Datum
 - b. Delta
 - c. CG limits
- WB904.** The greatest weight that an aircraft normally is allowed to have at landing. *(Weight and Balance)*
- a. Landing weight
 - b. Maximum Landing Weight
 - c. Minimum Landing Weight
- WB905.** The total weight of a loaded aircraft, including all fuel, is greater than the takeoff weight due to the fuel that will be burned during the taxi and run up operations. *(Weight and Balance)*
- a. Maximum T/O weight
 - b. Maximum Landing weight
 - c. Basic operation weight
 - d. _____
- WB906.** What is the average distance from the leading edge to the trailing edge of the wing. *(Weight and Balance)*
- a. CG.
 - b. GAMA
 - c. MAC

WB907. The horizontal distance in inches from the reference datum line to the CG of an item. The algebraic sign is plus (+) if measured aft of the datum, and minus (–) if measured forward of the datum. (Weight and Balance)

- a. Arm
- b. Datum
- c. Moment

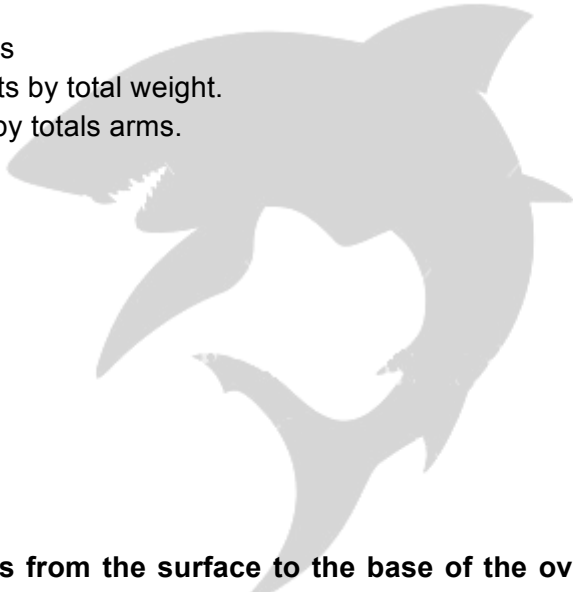


WB908. Which items are including in the empty weight of an aircraft? (Weight and Balance) PLT328 PVTASA3661

- a. Unusable fuel undrainable oil.
- b. Only the airframe, powerplant, and optional equipment.
- c. Full fuel tanks and engine oil to capacity.

WB909. The CG of an Aircraft may be determined by? (Weight and Balance) PLT021 COM570

- a. The sum of all weights
- b. Dividing total moments by total weight.
- c. Dividing total weight by totals arms.



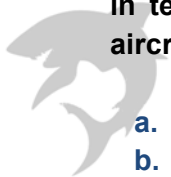
- Airspace

ASE1401. Which airspace extends from the surface to the base of the overlying Class E airspace. Although ATC has no authority or responsibility to control air traffic and there are visual flight rules (VFR) minimums which apply. (Airspace)

- a. Class A
- b. Class E
- c. Class B
- d. _____

ASE1402. Airspace that extends from the surface to 10,000 feet MSL surrounding the nation's busiest airports in terms of airport operations or passenger enplanements. An ATC clearance is required for all aircraft to operate in the area. (Airspace)

- a. Class G
- b. Class F
- c. Class A



d. _____

ASE1403. This type of airspaces extends from 18,000 feet mean sea level (MSL) up to and including flight level (FL) 600, including the airspace overlying the waters within 12 nautical miles (NM) of the coast of the 48 contiguous states and Alaska. (Airspace)

- a. Class F
- b. Class A
- c. Class B
- d. _____

ASE1404. Airspace that extends from the surface to 2,500 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower. When instrument procedures are published, this airspace is normally designed to contain the procedures and all aircraft must establish two-way radio communications with the ATC facility providing air traffic services prior to entering. (Airspace)

- a. Class A
- b. Class B
- c. Class D
- d. _____

ASE1405. It usually consists of a surface area with a five NM radius, an outer circle with a ten NM radius that extends from 1,200 feet to 4,000 feet above the airport elevation, and an outer area, an aircraft must establish two-way radio communications with the ATC facility providing air traffic services prior to entering on this airspace. (Airspace)

- a. Class D
- b. Class B
- c. Class G
- d. _____

ASE1406. The federal airways airspace beginning at either 700 or 1,200 feet above ground level (AGL) and is used to transition to and from the terminal or the en route environment, and enroute domestic and offshore airspace areas designated below 18,000 feet MSL. Unless designated at a lower altitude. Begins at 14,500 MSL over the United States, including that airspace overlying the waters within 12 NM of the coast of the 48 contiguous states and Alaska, up to but not including 18,000 feet MSL, and the airspace above FL 600. (Airspace)

- a. Special Airspace
- b. Class B
- c. Restricted Airspace

d. _____

ASE1407. Is an area that contains airspace of defined dimensions within which the flight of aircraft is prohibited? Such areas are established for security or other reasons associated with the national welfare. (Airspace)

- a. Restricted Areas
- b. MOA
- c. Prohibited Area

ASE1408. This Area is where flight operations are hazardous to nonparticipating aircraft. Penetration of these areas without authorization from the using or controlling agency may be extremely hazardous to the aircraft and its occupants. (Airspace)

- a. Prohibited Areas
- b. Special Airspace
- c. Alert Areas
- d. _____

ASE1409. If the restricted area is not active and has been released to the Federal Aviation Administration (FAA), the ATC facility will allow the aircraft to operate in the restricted airspace. (Airspace)

- a. With only issuing specific clearance for it to do so.
- b. Without issuing specific clearance for it to do so.
- c. Only with a specific Clearance form the Defense Department.

ASE1410. This Area is normally extending from 12 NM outward from the coast of the United States, containing activity that may be hazardous to nonparticipating aircraft. (Airspace)

- a. Alert Areas
- b. Controlled Firing Area
- c. MOA
- d. _____

ASE1411. This area is used for military operations. Whenever is being used, nonparticipating IFR traffic may be cleared through this area if separation can be provided by ATC. (Airspace)

- a. Controlled Firing Area
- b. Alert Areas
- c. Military Exercise Area
- d. _____

ASE1412. All activity within this area shall be conducted in accordance with regulations, and pilots of participating aircraft, as well as pilots transiting the area, shall be equally responsible for collision avoidance. (Airspace)

- a. Warning Areas
- b. MOAs
- c. Alert Areas



ASE1413. This routes are used by military aircraft to maintain proficiency in tactical flying, you will find this routes on a IFR Low Altitude charts depict has IR and VR. (Airspace)

- a. Victor Airways
- b. Military Training Routes
- c. Tango Training Routes

ASE1414. What type of service it's provided on TRSAs? (Airspace)

- a. IFR Clearance
- b. IFR and VFR flights Separation
- c. Terminal Weather Information
- d. _____

ASE1415. This airspace consists of a defined vertical and lateral dimensions established at locations where there is a requirement for increased security and safety of ground facilities. (Airspace)

- a. Military Operations Area
- b. Temporary Flight Restrictions
- c. National security Areas

ASE1416. Is the primary purpose of the ATC system? (Airspace)

- a. Is to prevent a collision between aircraft operating in the system and to organize and expedite the flow of traffic.
- b. Is to prevent an aircraft collision whit terrain in the system and to organize and expedite the flow of traffic.
- c. Is to prevent a collision between air traffic and buildings in the system and to organize and expedite the flow of traffic.

ASE1417. The Pilots operating an aircraft in Class A airspace must conduct the flight in? (Airspace)

- a. Visibility Above 3 SM
- b. Instrument Flight Rules
- c. ATC clearance
- d. _____

ASE1418. Which action does a pilot have to take if he/she is departing from a satellite airport without an operating control tower in class C boundaries? (Airspace)

- a. The pilots must monitor ATC frequency having jurisdiction over the Class C airspace.
- b. The pilot must establish and maintain two-way radio communications with the ATC serving facility.
- c. The pilot must establish and maintain two-way radio with the flight services station.



ASE1418. Excluding Hawaii, the vertical limits of the federal low altitude airways extend from? (Airspace) COM50

- a. 700 AGL up to , but not including, 18,000 feet MSL
- b. 1,200 AGL up to, 18,000 feet MSL
- c. 1,200 AGL up to, 17,999 MSL

ASE1419. Unless otherwise authorized or required by ATC, the maximum indicated airspeed permitted when at or below 2,500 feet AGL within 4NM of the primary airport within class C or D airspace is? (Airspace) COM99

- a. 250 Knots
- b. 200 Knots
- c. 180 Knots

ASE1420. Which is true regarding pilot certification requirements for operations in class B airspace? (Airspace) COM107

- a. The pilot in command must hold at least a Instrument Rating
- b. The pilot in command must hold at least a Commercial Pilot Certificate
- c. The pilot in command must hold at least a Private Pilot Certificate

ASE1421. What transponder equipment is required for airplane operations within class B airspace? A transponder (Airspace) COM88

- a. With 4096 code or mode S, and Mode C capability
- b. With 4096 code or mode A, and Mode B capability
- c. With 4096 code or mode S, and Mode Z capability

ASE1422. When approach to land at an airport with an ATC facility, in class D airspace, the pilot must establish communications prior to. (Airspace) COM145

- a. 10NM, up to and including 2,500 feet AGL
- b. 4NM, up to but not including 2,500 feet AGL
- c. 4NM , up to and including 2,500 feet AGL

ASE1423. The minimum flight visibility for VFR flight increases to 5 statutes miles beginning at altitude of? (Airspace) COM108

- a. 10,000 feet MSL if Above 1,200 AGL
- b. 10,000 feet MSL if above 1,200 MSL
- c. 10,000 feet MSL if above 700 AGL

ASE1424. Which is true regarding flight operations in class B airspace? (Airspace)

- a. The pilot need to hold an instrument rating
- b. The pilot need to field and IFR flight plan
- c. The pilot must receive an ATC clearance before operating an aircraft in that area

ASE1425. What designated airspace associated with an airport becomes inactive when the control tower at the airport is not in operation? (Airspace)

- a. Class D, which becomes class G
- b. Class B, which becomes class E
- c. Class D, which becomes class E

ASE1426. When operating an aircraft in the vicinity of an airport with an operating control tower, in class E airspace, a pilot must establish communications prior to. (Airspace)

- a. 4NM, and up to and including 1,200 AGL
- b. 4NM, and up but not including 1,200 AGL
- c. 4NM, and up to and including 2,500 AGL

ASE1427. What is required to operate an airplane under SPECIAL VFR within Class D airspace at night? (Airspace)

- a. The pilot must hold an commercial certificate, and the airplane must be equipped with GPS
- b. The pilot mist hold an instrument rating, and the airplane must be equipped for instrument flight
- c. The pilot must hold and instrument rating, and the airplane must be equipped whit HSI.

