

TEMA: 0292 FLT/DSP - (CHAP. 03) AERODYNAMICS

COD_PREG: **PREGUNTA:** **RPTA:**

PREG20084823 When are inboard ailerons normally used? C
(8324)

- OPCION A:** Low-speed flight only.
OPCION B: High-speed flight only.
OPCION C: Low-speed and high-speed flight.
OPCION D:
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PREG20084824 When are outboard ailerons normally used? A
(8325)

- OPCION A:** Low-speed flight only.
OPCION B: High-speed flight only.
OPCION C: Low-speed and high-speed flight.
OPCION D:
-

PREG20084825 Which of the following is considered a primary flight control? B
(8326)

- OPCION A:** Slats.
OPCION B: Elevator.
OPCION C: Dorsal fin.
OPCION D:
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PREG20084826 Which of the following is considered an auxiliary flight control? C
(8327)

- OPCION A:** Ruddervator.
OPCION B: Upper rudder.
OPCION C: Leading-edge flaps.
OPCION D:
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PREG20084827 What is the purpose of a control tab? A
(8328)

- OPCION A:** Move the flight controls in the event of manual reversion.
OPCION B: Reduce control forces by deflecting in the proper direction to move a primary flight control.
OPCION C: Prevent a control surface from moving to a full-deflection position due to aerodynamic forces.
OPCION D:
-

PREG20084828 What is the purpose of an anti-servo tab? C
(8329)

- OPCION A:** Move the flight controls in the event of manual reversion.
OPCION B: Reduce control forces by deflecting in the proper direction to move a primary flight control.

OPCION C: Prevent a control surface from moving to a full-deflection position due to aerodynamic forces.

OPCION D:

PREG20084829 (8330) What is the purpose of a servo tab? B

OPCION A: Move the flight controls in the event of manual reversion.

OPCION B: Reduce control forces by deflecting in the proper direction to move a primary flight control.

OPCION C: Prevent a control surface from moving to a full-deflection position due to aerodynamic forces.

OPCION D:

PREG20084830 (8331) Which is a purpose of leading-edge flaps? A

OPCION A: Increase the camber of the wing.

OPCION B: Reduce lift without increasing airspeed.

OPCION C: Direct airflow over the top of the wing at high angles of attack.

OPCION D:

PREG20084831 (8332) What is a purpose of flight spoilers? B

OPCION A: Increase the camber of the wing.

OPCION B: Reduce lift without increasing airspeed.

OPCION C: Direct airflow over the top of the wing at high angles of attack.

OPCION D:

PREG20084832 (8333) For which purpose may flight spoilers be used? A

OPCION A: Reduce the wings' lift upon landing.

OPCION B: Increase the rate of descent without increasing aerodynamic drag.

OPCION C: Aid longitudinal balance when rolling an airplane into a turn.

OPCION D:

PREG20084833 (8334) Which is a purpose of leading-edge slats on high-performance wings? A

OPCION A: Increase lift at relative slow speeds.

OPCION B: Improve aileron control during low angles of attack.

OPCION C: Direct air from the low pressure area under the leading edge along the top of the wing.

OPCION D:

PREG20084834 (8335) Which is a purpose of leading-edge slats on high-performance wings? C

OPCION A: Decrease lift at relative slow speeds.

OPCION B: Improve aileron control during low angles of attack.

OPCION C: Direct air from the high pressure area under the leading edge along the top of the wing.

OPCION D:

PREG20084835 (8336) Which is a purpose of ground spoilers? A

OPCION A: Reduce the wings' lift upon landing.

OPCION B: Aid in rolling an airplane into a turn.

OPCION C: Increase the rate of descent without gaining airspeed.

OPCION D:

PREG20084836 (8337) Which direction from the primary control surface does an anti-servo tab move? A

OPCION A: Same direction.

OPCION B: Opposite direction.

OPCION C: Remains fixed for all positions.

OPCION D:

PREG20084837 (8338) Which direction from the primary control surface does a servo tab move? B

OPCION A: Same direction.

OPCION B: Opposite direction.

OPCION C: Remains fixed for all positions.

OPCION D:

PREG20084838 (8339) Which direction from the primary control surface does an elevator adjustable trim tab move when the control surface is moved? C

OPCION A: Same direction.

OPCION B: Opposite direction.

OPCION C: Remains fixed for all positions.

OPCION D:

PREG20084839 (8340) What is the purpose of an elevator trim tab? C

OPCION A: Provide horizontal balance as airspeed is increased to allow hands-off flight.

OPCION B: Adjust the speed tail load for different airspeeds in flight allowing neutral control forces.

OPCION C: Modify the downward tail load for various airspeeds in flight eliminating flight-control pressures.

OPCION D:

PREG20084840 (8341) Which is a purpose of wing-mounted vortex generators? A

OPCION A: Reduce the drag caused by supersonic flow over portions of the wing.

OPCION B: Increase the onset of drag divergence and aid in aileron effectiveness at high speed.

OPCION C: Break the airflow over the wing so the stall will progress from the root out to the tip of the wing.

OPCION D:

PREG20084841 (8342) Why do some airplanes equipped with inboard/outboard ailerons use the outboards for slow flight only? B

OPCION A: Increased surface area provides greater controllability with flap extension.

OPCION B: Aerodynamic loads on the outboard ailerons tend to twist the wingtips at high speeds.

OPCION C: Locking out the outboard ailerons in high-speed flight provides variable flight control feel.

OPCION D:

PREG20084842 (8343) Which of the following are considered primary flight controls? C

OPCION A: Tabs.

OPCION B: Flaps.

OPCION C: Outboard ailerons.

OPCION D:

PREG20084843 (8345) What effect does an increase in airspeed have on a coordinated turn while maintaining a constant angle of bank and altitude? C

OPCION A: The rate of turn will decrease resulting in a decreased load factor.

OPCION B: The rate of turn will increase resulting in an increased load factor.

OPCION C: The rate of turn will decrease resulting in no changes in load factor.

OPCION D:

PREG20084844 (8346) What is the effect on total drag of an aircraft if the airspeed decreases in level flight below that speed for maximum L/D? A

OPCION A: Drag increases because of increased induced drag.

OPCION B: Drag increases because of increased parasite drag.

OPCION C: Drag decreases because of lower induced drag.

OPCION D:

PREG20084845 (8347) What is load factor? C

OPCION A: Lift multiplied by the total weight.

OPCION B: Lift subtracted from the total weight.

OPCION C: Lift divided by the total weight.

OPCION D:

PREG20084846 (8348) What affects indicated stall speed? A

OPCION A: Weight, load factor, and power.

OPCION B: Load factor, angle of attack, and power.

OPCION C: Angle of attack, weight, and air density.

OPCION D:

PREG20084847 (8349) If no corrective action is taken by the pilot as angle of bank is increased, how is the vertical component of lift and sink rate affected? C

OPCION A: Lift increases and the sink rate increases.

OPCION B: Lift decreases and the sink rate decreases.

OPCION C: Lift decreases and the sink rate increases.

OPCION D:

PREG20084848 (8350) Why must the angle of attack be increased during a turn to maintain altitude? A

OPCION A: Compensate for loss of vertical component of lift.

OPCION B: Increase the horizontal component of lift equal to the vertical component.

OPCION C: Compensate for increase in drag.

OPCION D:

PREG20084849 (8351) How can the pilot increase the rate of turn and decrease the radius at the same time? B

OPCION A: Steepen the bank and increase airspeed.

OPCION B: Steepen the bank and decrease airspeed.

OPCION C: Shallow the bank and increase airspeed.

OPCION D:

PREG20084850 (8352) What is the relationship of the rate of turn with the radius of turn with a constant angle of bank but increasing airspeed? A

OPCION A: Rate will decrease and radius will increase.

OPCION B: Rate will increase and radius will decrease.

OPCION C: Rate and radius will increase.

OPCION D:

PREG20084851 (8353) Upon which factor does wing loading during a level coordinated turn in smooth air depend? B

OPCION A: Rate of turn.

OPCION B: Angle of bank.

OPCION C: True airspeed.

OPCION D:

PREG20084852 (8354) If an aircraft with a gross weight of 2,000 pounds were subjected to a total of 6,000 pounds in flight, the load factor would be B

OPCION A: 2 Gs.

OPCION B: 3 Gs.

OPCION C: 9 Gs.

OPCION D:

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- PREG20084883 (8397) What is the relationship between induced and parasite drag when the gross weight is increased? B
- OPCION A:** Parasite drag increases more than induced drag.
- OPCION B:** Induced drag increases more than parasite drag.
- OPCION C:** Both parasite and induced drag are equally increased.
- OPCION D:**
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- PREG20084884 (8399) At which speed will increasing the pitch attitude cause an airplane to climb? B
- OPCION A:** Low speed.
- OPCION B:** High speed.
- OPCION C:** Any speed.
- OPCION D:**
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- PREG20084853 (8356) Airflow separation over the wing can be delayed by using vortex generators C
- OPCION A:** directing high pressure air over the top of the wing or flap through slots and making the wing surface smooth.
- OPCION B:** directing a suction over the top of the wing or flap through slots and making the wing surface smooth.
- OPCION C:** making the wing surface rough and/or directing high pressure air over the top of the wing or flap through slots.
- OPCION D:**
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- PREG20084854 (8359) What procedure is recommended for an engine-out approach and landing? A
- OPCION A:** The flightpath and procedures should be almost identical to a normal approach and landing.
- OPCION B:** The altitude and airspeed should be considerably higher than normal throughout the approach.
- OPCION C:** A normal approach, except do not extend the landing gear or flaps until over the runway threshold.
- OPCION D:**
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- PREG20084855 (8361) What criteria determines which engine is the "critical" engine of a twin-engine airplane? A
- OPCION A:** The one with the center of thrust closest to the centerline of the fuselage.
- OPCION B:** The one designated by the manufacturer which develops most usable thrust.
- OPCION C:** The one with the center of thrust farthest from the centerline of the fuselage.
- OPCION D:**
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- PREG20084856 (8362) What effect, if any, does altitude have on Vmc for an airplane with unsupercharged engines? C
- OPCION A:** None.
- OPCION B:** Increases with altitude.

OPCION C: Decreases with altitude.

OPCION D:

PREG20084857 (8363) Under what condition should stalls never be practiced in a twin-engine airplane? A

OPCION A: With one engine inoperative.

OPCION B: With climb power on.

OPCION C: With full flaps and gear extended.

OPCION D:

PREG20084858 (8365) Identify the type stability if the aircraft attitude remains in the new position after the controls have been neutralized. C

OPCION A: Negative longitudinal static stability.

OPCION B: Neutral longitudinal dynamic stability.

OPCION C: Neutral longitudinal static stability.

OPCION D:

PREG20084859 (8366) What is a characteristic of longitudinal instability? A

OPCION A: Pitch oscillations becoming progressively greater.

OPCION B: Bank oscillations becoming progressively greater.

OPCION C: Aircraft constantly tries to pitch down.

OPCION D:

PREG20084860 (8367) Describe dynamic longitudinal stability. B

OPCION A: Motion about the longitudinal axis.

OPCION B: Motion about the lateral axis.

OPCION C: Motion about the vertical axis.

OPCION D:

PREG20084861 (8372) Identify the type stability if the aircraft attitude tends to move farther from its original position after the controls have been neutralized. A

OPCION A: Negative static stability.

OPCION B: Positive static stability.

OPCION C: Negative dynamic stability.

OPCION D:

PREG20084862 (8373) Identify the type stability if the aircraft attitude tends to return to its original position after the controls have been neutralized. B

OPCION A: Positive dynamic stability.

OPCION B: Positive static stability.

OPCION C: Neutral dynamic stability.

OPCION D:

PREG20084863 (8375) What flight condition should be expected when an aircraft leaves ground effect? A

OPCION A: An increase in induced drag requiring a higher angle of attack.

OPCION B: A decrease in parasite drag permitting a lower angle of attack.

OPCION C: An increase in dynamic stability.

OPCION D:

PREG20084864 (8376) What characteristic should exist if an airplane is loaded to the rear of its CG range? C

OPCION A: Sluggish in aileron control.

OPCION B: Sluggish in rudder control.

OPCION C: Unstable about the lateral axis.

OPCION D:

PREG20084865 (8377) What will be the ratio between airspeed and lift if the angle of attack and other factors remain constant and airspeed is doubled? Lift will be C

OPCION A: the same.

OPCION B: two times greater.

OPCION C: four times greater.

OPCION D:

PREG20084866 (8378) What true airspeed and angle of attack should be used to generate the same amount of lift as altitude is increased? B

OPCION A: The same true airspeed and angle of attack.

OPCION B: A higher true airspeed for any given angle of attack.

OPCION C: A lower true airspeed and higher angle of attack.

OPCION D:

PREG20084867 (8379) How can an airplane produce the same lift in ground effect as when out of ground effect? B

OPCION A: The same angle of attack.

OPCION B: A lower angle of attack.

OPCION C: A higher angle of attack.

OPCION D:

PREG20084868 (8380) What are some characteristics of an airplane loaded with the CG at the limit? A

OPCION A: Lowest stall speed, highest cruise speed, and least stability.

OPCION B: Highest stall speed, highest cruise speed, and least stability.

OPCION C: Lowest stall speed, lowest cruise speed, and highest stability.

OPCION D:

PREG20084869 (8382) By changing the angle of attack of a wing, the pilot can control the airplane's B

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- OPCION A:** lift, gross weight, and drag.
OPCION B: lift, airspeed, and drag.
OPCION C: lift and airspeed, but not drag.
OPCION D:
-

PREG20084870 (8384) The primary purpose of high-lift devices is to increase the B

- OPCION A:** L/Dmax.
OPCION B: lift at low speeds.
OPCION C: drag and reduce airspeed.
OPCION D:
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PREG20084871 (8385) What is the primary function of the leading edge flaps in landing configuration during the flare before touchdown? A

- OPCION A:** Prevent flow separation.
OPCION B: Decrease rate of sink.
OPCION C: Increase profile drag.
OPCION D:
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PREG20084872 (8386) What effect does the leading edge slot in the wing have on performance? B

- OPCION A:** Decreases profile drag.
OPCION B: Changes the stalling angle of attack to a higher angle.
OPCION C: Decelerates the upper surface boundary layer air.
OPCION D:
-

PREG20084873 (8387) Within what Mach range does transonic flight regimes usually occur? B

- OPCION A:** .50 to .75 Mach.
OPCION B: .75 to 1.20 Mach.
OPCION C: 1.20 to 2.50 Mach.
OPCION D:
-

PREG20084874 (8388) What is the highest speed possible without supersonic flow over the wing? B

- OPCION A:** Initial buffet speed.
OPCION B: Critical Mach number.
OPCION C: Transonic index.
OPCION D:
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PREG20084875 (8389) What is the free stream Mach number which produces first evidence of local sonic flow? C

- OPCION A:** Supersonic Mach number.
OPCION B: Transonic Mach number.

OPCION C: Critical Mach number.

OPCION D:

PREG20084876 (8390) At what Mach range does the subsonic flight range normally occur? A

OPCION A: Below .75 Mach.

OPCION B: From .75 to 1.20 Mach.

OPCION C: From 1.20 to 2.50 Mach.

OPCION D:

PREG20084877 (8391) What is the principal advantage of a sweepback design wing over a straightwing design? A

OPCION A: The critical Mach number will increase significantly.

OPCION B: Sweepback will increase changes in the magnitude of force coefficients due to compressibility.

OPCION C: Sweepback will accelerate the onset of compressibility effect.

OPCION D:

PREG20084878 (8392) What is the result of a shock-induced separation of airflow occurring symmetrically near the wing root of a sweptwing aircraft? B

OPCION A: A high-speed stall and sudden pitchup.

OPCION B: A severe moment or "tuck under".

OPCION C: Severe porpoising.

OPCION D:

PREG20084879 (8393) What is one disadvantage of a sweptwing design? B

OPCION A: The wing root stalls prior to the wingtip section.

OPCION B: The wingtip section stalls prior to the wing root.

OPCION C: Severe pitchdown moment when the center of pressure shifts forward.

OPCION D:

PREG20084880 (8394) What is the condition known as when gusts cause a sweptwing-type airplane to roll in one direction while yawing in the other? C

OPCION A: Porpoise.

OPCION B: Wingover.

OPCION C: Dutch roll.

OPCION D:

PREG20084881 (8395) What is the movement of the center of pressure when the wingtips of a sweptwing airplane are shock-stalled first? B

OPCION A: Inward and aft.

OPCION B: Inward and forward.

OPCION C: Outward and forward.

OPCION D:

- PREG20084882 (8396) For a given angle of bank, the load factor imposed on both the aircraft and pilot in a coordinated constant-altitude turn C
- OPCION A:** is directly related to the airplane's gross weight.
- OPCION B:** varies with the rate of turn.
- OPCION C:** is constant.
- OPCION D:**
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