

**TEMA:** 0155 COMMERCIAL PILOT - (CH. 1) BASIC  
AERODYNAMICS

<b>COD PREG:</b>	<b>PREGUNTA:</b>	<b>RPTA:</b>
PREG20080192	If the same angle of attack is maintained in ground effect as when out of ground effect, lift will	A
<b>OPCION A:</b>	increase, and induced drag will decrease.	
<b>OPCION B:</b>	decrease, and parasite drag will increase.	
<b>OPCION C:</b>	increase, and induced drag will increase.	
PREG20080196	During the transition from straight-and-level flight to a climb, the angle of attack is increased and lift	C
<b>OPCION A:</b>	is momentarily decreased.	
<b>OPCION B:</b>	remains the same.	
<b>OPCION C:</b>	is momentarily increased.	
PREG20080195	Which is true regarding the force of lift in steady, unaccelerated flight?	B
<b>OPCION A:</b>	At lower speeds the angle of attack must be less to generate sufficient lift to maintain altitude.	
<b>OPCION B:</b>	There is a corresponding indicated airspeed required for every angle of attack to generate sufficient lift to maintain altitude.	
<b>OPCION C:</b>	An airfoil will always stall at the same indicated airspeed; therefore, an increase in weight will require an increase in speed to generate sufficient lift to maintain altitude.	
PREG20080194	Which is true regarding the forces acting on an aircraft in a steady-state descent? The sum of all	C
<b>OPCION A:</b>	upward forces is less than the sum of all downward forces.	
<b>OPCION B:</b>	rearward forces is greater than the sum of all forward forces.	
<b>OPCION C:</b>	forward forces is equal to the sum of all rearward forces.	
PREG20080193	What performance is characteristic of flight at maximum lift/drag ratio in a propeller-driven airplane? Maximum	B
<b>OPCION A:</b>	gain in altitude over a given distance.	
<b>OPCION B:</b>	range and maximum distance glide.	
<b>OPCION C:</b>	coefficient of lift and minimum coefficient of drag.	
PREG20080191	Figure 3 The L/D ratio at a 2° angle of attack is approximately the same as the L/D ratio for a	C
<b>OPCION A:</b>	9.75° angle of attack.	
<b>OPCION B:</b>	10.5° angle of attack.	
<b>OPCION C:</b>	16.5° angle of attack.	

PREG20080215	When landing behind a large aircraft, which procedure should be followed for vortex avoidance?	A
<b>OPCION A:</b>	Stay above its final approach flightpath all the way to touchdown.	
<b>OPCION B:</b>	Stay below and to one side of its final approach flightpath.	
<b>OPCION C:</b>	Stay well below its final approach flightpath and land at least 2000 feet behind.	
PREG20080189	Figure 3 If an airplane glides at an angle of attack of 10°, how much altitude will it lose in 1 mile?	B
<b>OPCION A:</b>	240 feet.	
<b>OPCION B:</b>	480 feet.	
<b>OPCION C:</b>	960 feet.	
PREG20080197	Figure 4 What is the stall speed of an airplane under a load factor of 2 Gs if the unaccelerated stall speed is 60 knots?	C
<b>OPCION A:</b>	66 knots.	
<b>OPCION B:</b>	74 knots.	
<b>OPCION C:</b>	84 knots.	
PREG20080188	An airplane will stall at the same	A
<b>OPCION A:</b>	angle of attack regardless of the attitude with relation to the horizon.	
<b>OPCION B:</b>	airspeed regardless of the attitude with relation to the horizon.	
<b>OPCION C:</b>	angle of attack and attitude with relation to the horizon.	
PREG20080187	The stalling speed of an airplane is most affected by	C
<b>OPCION A:</b>	changes in air density.	
<b>OPCION B:</b>	variations in flight altitude.	
<b>OPCION C:</b>	variations in airplane loading.	
PREG20080186	If airspeed is increased during a level turn, what action would be necessary to maintain altitude? The angle of attack	C
<b>OPCION A:</b>	and angle of bank must be decreased.	
<b>OPCION B:</b>	must be increased or angle of bank decreased.	
<b>OPCION C:</b>	must be decreased or angle of bank increased.	
PREG20080185	An airplane leaving ground effect will	B
<b>OPCION A:</b>	experience a reduction in ground friction and require a slight power reduction.	
<b>OPCION B:</b>	experience an increase in induced drag and require more thrust.	
<b>OPCION C:</b>	require a lower angle of attack to maintain the same lift coefficient.	

PREG20080184	If an airplane is loaded to the rear of its CG range, it will tend to be unstable about its	B
<b>OPCION A:</b>	vertical axis.	
<b>OPCION B:</b>	lateral axis.	
<b>OPCION C:</b>	longitudinal axis.	
PREG20080190	Figure 3 How much altitude will this airplane lose in 3 miles of gliding at an angle of attack of 8°?	C
<b>OPCION A:</b>	440 feet.	
<b>OPCION B:</b>	880 feet.	
<b>OPCION C:</b>	1,320 feet.	
PREG20080198	Figure 4 What increase in load factor would take place if the angle of bank were increased from 60° to 80°?	C
<b>OPCION A:</b>	3 Gs.	
<b>OPCION B:</b>	3.5 Gs.	
<b>OPCION C:</b>	4 Gs.	
PREG20080201	As the angle of bank is increased, the vertical component of lift	A
<b>OPCION A:</b>	decreases and the horizontal component of lift increases.	
<b>OPCION B:</b>	increases and the horizontal component of lift decreases.	
<b>OPCION C:</b>	decreases and the horizontal component of lift remains constant.	
PREG20080200	To produce the same lift while in ground effect as when out of ground effect, the airplane requires	A
<b>OPCION A:</b>	a lower angle of attack.	
<b>OPCION B:</b>	the same angle of attack.	
<b>OPCION C:</b>	a greater angle of attack.	
PREG20080183	Recovery from a stall in any airplane becomes more difficult when its	A
<b>OPCION A:</b>	center of gravity moves aft.	
<b>OPCION B:</b>	center of gravity moves forward.	
<b>OPCION C:</b>	elevator trim is adjusted nosedown.	
PREG20080214	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?	A
<b>OPCION A:</b>	Past the point where the jet touched down.	
<b>OPCION B:</b>	At the point where the jet touched down, or just prior to this point.	
<b>OPCION C:</b>	Approximately 500 feet prior to the point where the jet touched down.	

PREG20080213	Which procedure should you follow to avoid wake turbulence if a large jet crosses your course from left to right approximately 1 mile ahead and at your altitude?	A
OPCION A:	Make sure you are slightly above the path of the jet.	
OPCION B:	Slow your airspeed to Va and maintain altitude and course.	
OPCION C:	Make sure you are slightly below the path of the jet and perpendicular to the course.	
PREG20080212	During a takeoff made behind a departing large jet airplane, the pilot can minimize the hazard of wingtip vortices by	A
OPCION A:	being airborne prior to reaching the jet's flightpath until able to turn clear of its wake.	
OPCION B:	maintaining extra speed on takeoff and climbout.	
OPCION C:	extending the takeoff roll and not rotating until well beyond the jet's rotation point.	
PREG20080211	Choose the correct statement regarding wake turbulence.	B
OPCION A:	Vortex generation begins with the initiation of the takeoff roll.	
OPCION B:	The primary hazard is loss of control because of induced roll.	
OPCION C:	The greatest vortex strength is produced when the generating airplane is heavy, clean, and fast.	
PREG20080210	Which maximum range factor decreases as weight decreases?	B
OPCION A:	Altitude.	
OPCION B:	Airspeed.	
OPCION C:	Angle of attack.	
PREG20080199	To generate the same amount of lift as altitude is increased, an airplane must be flown at	C
OPCION A:	the same true airspeed regardless of angle of attack.	
OPCION B:	a lower true airspeed and a greater angle of attack.	
OPCION C:	a higher true airspeed for any given angle of attack.	
PREG20080209	A propeller rotating clockwise as seen from the rear, creates a spiraling slipstream the spiralling slipstream along with torque effect, tends to rotate the airplane to the	B
OPCION A:	right around the vertical axis, and to the left around the longitudinal axis.	
OPCION B:	left around the vertical axis, and to the right around the longitudinal axis.	
OPCION C:	left around the vertical axis, and to the left around the longitudinal axis.	
PREG20080207	Figure 5 The horizontal dashed line from point C to point E represents the	B
OPCION A:	ultimate load factor.	

**OPCION B:** positive limit load factor.

**OPCION C:** airspeed range for normal operations.

PREG20080206 If the airplane attitude initially tends to return to its original position after the elevator control is pressed forward and released, the airplane displays B

**OPCION A:** positive dynamic stability.

**OPCION B:** positive static stability.

**OPCION C:** neutral dynamic stability.

PREG20080205 What changes in airplane longitudinal control must be made to maintain altitude while the airspeed is being decreased? B

**OPCION A:** Increase the angle of attack to produce more lift than drag.

**OPCION B:** Increase the angle of attack to compensate for the decreasing lift.

**OPCION C:** decrease the angle of attack to compensate for the increasing drag.

PREG20080204 Longitudinal stability involves the motion of the airplane controlled by its B

**OPCION A:** rudder.

**OPCION B:** elevator.

**OPCION C:** ailerons.

PREG20080203 Longitudinal dynamic instability in an airplane can be identified by B

**OPCION A:** bank oscillations becoming progressively steeper.

**OPCION B:** pitch oscillations becoming progressively steeper.

**OPCION C:** Trilatitudinal roll oscillations becoming progressively steeper.

PREG20080202 If the airplane attitude remains in a new position after the elevator control is pressed forward and released, the airplane displays A

**OPCION A:** neutral longitudinal static stability.

**OPCION B:** positive longitudinal static stability.

**OPCION C:** neutral longitudinal dynamic stability.

PREG20080208 Figure 5  
The vertical line from point E to point F is represented on the airspeed indicator by the A

**OPCION A:** upper limit of the yellow arc.

**OPCION B:** upper limit of the green arc.

**OPCION C:** blue radial line.

PREG20080182 In small airplanes, normal recovery from spins may become difficult if the B

**OPCION A:** CG is too far rearward and rotation is around the longitudinal axis.

**OPCION B:** CG is too far rearward and rotation is around the CG.

**OPCION C:** spin is entered before the stall is fully developed.

PREG20080174 A rectangular wing, as compared to other wing planforms, has a tendency to stall first at the **B**

**OPCION A:** wingtip, with the stall progression toward the wing root.

**OPCION B:** wing root, with the stall progression toward the wing tip.

**OPCION C:** center trailing edge, with the stall progression outward toward the wing root and tip.

PREG20080180 Which statement is true, regarding the opposing forces acting on an airplane in steady-state level flight? **A**

**OPCION A:** These forces are equal.

**OPCION B:** Thrust is greater than drag and weight and lift are equal.

**OPCION C:** Thrust is greater than drag and lift is greater than weight.

PREG20080160 As airspeed decreases in level flight below that speed for maximum lift/drag ratio, total drag of an airplane **B**

**OPCION A:** decreases because of lower parasite drag.

**OPCION B:** increases because of increased induced drag.

**OPCION C:** increases because of increased parasite drag.

PREG20080159 In theory, if the airspeed of an airplane is doubled while in level flight, parasite drag will become **C**

**OPCION A:** twice as great.

**OPCION B:** half as great.

**OPCION C:** four times greater.

PREG20080158 The need to slow an aircraft below  $V_a$  is brought about by the following weather phenomenon: **B**

**OPCION A:** High density altitude which increases the indicated stall speed.

**OPCION B:** Turbulence which causes an increase in stall speed.

**OPCION C:** Turbulence which causes a decrease in stall speed.

PREG20080157 While holding the angle of bank constant in a level turn, if the rate of turn is varied the load factor would **A**

**OPCION A:** remain constant regardless of air density and the resultant lift vector.

**OPCION B:** vary depending upon speed and air density provided the resultant lift vector varies proportionately.

**OPCION C:** vary depending upon the resultant lift vector.

PREG20080156 Lift on a wing is most properly defined as the **A**

**OPCION A:** force acting perpendicular to the relative wind.

**OPCION B:** differential pressure acting perpendicular to the chord of the wing.

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**OPCION C:** reduced pressure resulting from a laminar flow over the upper camber of an airfoil, which acts perpendicular to the mean camber.

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PREG20080154 If an aircraft with a gross weight of 2,000 pounds was subjected to a 60° constant-altitude bank, the total load would be **B**

**OPCION A:** 3,000 pounds.

**OPCION B:** 4,000 pounds.

**OPCION C:** 12,000 pounds.

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PREG20080153 In a rapid recovery from a dive, the effects of load factor would cause the stall speed to **A**

**OPCION A:** increase.

**OPCION B:** decrease.

**OPCION C:** not vary.

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PREG20080152 Airplane wing loading during a level coordinated turn in smooth air depends upon the **B**

**OPCION A:** rate of turn.

**OPCION B:** angle of bank.

**OPCION C:** true airspeed.

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PREG20080151 For a given angle of bank, in any airplane, the load factor imposed in a coordinated constant-altitude turn **A**

**OPCION A:** is constant and the stall speed increases.

**OPCION B:** varies with the rate of turn.

**OPCION C:** is constant and the stall speed decreases.

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PREG20080150 Load factor is the lift generated by the wings of an aircraft at any given time **A**

**OPCION A:** divided by the total weight of the aircraft.

**OPCION B:** multiplied by the total weight of the aircraft.

**OPCION C:** divided by the basic empty weight of the aircraft.

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PREG20080149 The ratio between the total airload imposed on the wing and the gross weight of an aircraft in flight is known as **A**

**OPCION A:** load factor and directly affects stall speed.

**OPCION B:** aspect load and directly affects stall speed.

**OPCION C:** load factor and has no relation with stall speed.

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PREG20080148 If an airplane category is listed as utility, it would mean that this airplane could be operated in which of the following maneuvers? **B**

**OPCION A:** Limited acrobatics, excluding spins.

**OPCION B:** Limited acrobatics, including spins (if approved).

**OPCION C:** Any maneuver except acrobatics or spins.



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PREG20080181	The angle of attack at which a wing stalls remains constant regardless of	A
<b>OPCION A:</b>	weight, dynamic pressure, bank angle, or pitch attitude.	
<b>OPCION B:</b>	dynamic pressure, but varies with weight, bank angle, and pitch attitude.	
<b>OPCION C:</b>	weight and pitch attitude, but varies with dynamic pressure and bank angle.	

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PREG20080161	If the airspeed is increased from 90 knots to 135 knots during a level 60° banked turn, the load factor will	C
<b>OPCION A:</b>	increase as well as the stall speed.	
<b>OPCION B:</b>	decrease and the stall speed will increase.	
<b>OPCION C:</b>	remain the same but the radius of turn will increase.	

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PREG20080162	(Ver figura 1) At the airspeed represented by point A, in steady flight, the airplane will	A
<b>OPCION A:</b>	have its maximum L/D ratio.	
<b>OPCION B:</b>	have its minimum L/D ratio.	
<b>OPCION C:</b>	be developing its maximum coefficient of lift.	

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PREG20080155	While maintaining a constant angle of bank and altitude in a coordinated turn, an increase in airspeed will	B
<b>OPCION A:</b>	decrease the rate of turn resulting in a decreased load factor.	
<b>OPCION B:</b>	decrease the rate of turn resulting in no change in load factor.	
<b>OPCION C:</b>	increase the rate of turn resulting in no change in load factor.	

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PREG20080164	Which statement is true relative to changing angle of attack?	B
<b>OPCION A:</b>	A decrease in angle of attack will increase pressure below the wing, and decrease drag.	
<b>OPCION B:</b>	An increase in angle of attack will increase drag.	
<b>OPCION C:</b>	An increase in angle of attack will decrease pressure below the wing, and increase drag.	

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PREG20080163	(Ver Figura 1) At an airspeed represented by point B, in steady flight, the pilot can expect to obtain the airplane's maximum	B
<b>OPCION A:</b>	endurance.	
<b>OPCION B:</b>	glide range.	
<b>OPCION C:</b>	coefficient of lift.	

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PREG20080178	An aircraft wing is designed to produce lift resulting from a difference in the	C
<b>OPCION A:</b>	negative air pressure below and vacuum above the wing's surface.	



<b>OPCION B:</b>	vacuum below the wing's surface and greater air pressure above the wing's surface.	
<b>OPCION C:</b>	higher air pressure below the wing's surface and lower air pressure above the wing's surface.	
PREG20080177	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	C
<b>OPCION A:</b>	the same as at the lower speed.	
<b>OPCION B:</b>	two times greater than at the lower speed.	
<b>OPCION C:</b>	four times greater than at the lower speed.	
PREG20080176	The angle of attack of a wing directly controls the	C
<b>OPCION A:</b>	angle of incidence of the wing.	
<b>OPCION B:</b>	amount of airflow above and below the wing.	
<b>OPCION C:</b>	distribution of pressures acting on the wing.	
PREG20080175	By changing the angle of attack of a wing, the pilot can control the airplane's	A
<b>OPCION A:</b>	lift, airspeed, and drag.	
<b>OPCION B:</b>	lift, airspeed, and CG.	
<b>OPCION C:</b>	lift and airspeed, but not drag.	
PREG20080173	Stall speed is affected by	A
<b>OPCION A:</b>	weight, load factor, and power.	
<b>OPCION B:</b>	load factor, angle of attack, and power.	
<b>OPCION C:</b>	angle of attack, weight, and air density.	
PREG20080172	To maintain altitude during a turn, the angle of attack must be increased to compensate for the decrease in the	B
<b>OPCION A:</b>	forces opposing the resultant component of drag.	
<b>OPCION B:</b>	vertical component of lift.	
<b>OPCION C:</b>	horizontal component of lift.	
PREG20080179	On a wing, the force of lift acts perpendicular to and the force of drag acts parallel to the	B
<b>OPCION A:</b>	chord line.	
<b>OPCION B:</b>	flightpath.	
<b>OPCION C:</b>	longitudinal axis.	
PREG20080165	(Ver Figura 2) Select the correct statement regarding stall speeds.	C
<b>OPCION A:</b>	Power-off stalls occur at higher airspeeds with the gear and flaps down.	
<b>OPCION B:</b>	In a 60° bank the airplane stalls at a lower airspeed with the gear up.	
<b>OPCION C:</b>	Power-on stalls occur at lower airspeeds in shallower banks.	

PREG20080170	Which is correct with respect to rate and radius of turn for an airplane flown in a coordinated turn at a constant altitude?	A
<b>OPCION A:</b>	For a specific angle of bank and airspeed, the rate and radius of turn will not vary.	
<b>OPCION B:</b>	To maintain a steady rate of turn, the angle of bank must be increased as the airspeed is decreased.	
<b>OPCION C:</b>	The faster the true airspeed, the faster the rate and larger the radius of turn regardless of the angle of bank.	
PREG20080169	To increase the rate of turn and at the same time decrease the radius, a pilot should	C
<b>OPCION A:</b>	maintain the bank and decrease airspeed.	
<b>OPCION B:</b>	increase the bank and increase airspeed.	
<b>OPCION C:</b>	increase the bank and decrease airspeed.	
PREG20080168	One of the main functions of flaps during the approach and landing is to	B
<b>OPCION A:</b>	decrease the angle of descent without increasing the airspeed.	
<b>OPCION B:</b>	provide the same amount of lift at a slower airspeed.	
<b>OPCION C:</b>	decrease lift, thus enabling a steeper-than-normal approach to be made.	
PREG20080167	Which is true regarding the use of flaps during level turns?	B
<b>OPCION A:</b>	The lowering of flaps increases the stall speed.	
<b>OPCION B:</b>	The raising of flaps increases the stall speed.	
<b>OPCION C:</b>	Raising flaps will require added forward pressure on the yoke or stick.	
PREG20080166	(Ver Figura 2) Select the correct statement regarding stall speeds. The airplane will stall	A
<b>OPCION A:</b>	10 knots higher in a power-on 60° bank with gear and flaps up than with gear and flaps down.	
<b>OPCION B:</b>	25 knots lower in a power-off, flaps up, 60° bank, than in a power-off, flaps down, wings-level configuration.	
<b>OPCION C:</b>	10 knots higher in a 45° bank, power-on stall than in a wings-level stall with flaps up.	
PREG20080171	Why is it necessary to increase back elevator pressure to maintain altitude during a turn? To compensate for the	A
<b>OPCION A:</b>	loss of vertical component of lift.	
<b>OPCION B:</b>	loss of the horizontal component of lift and the increase in centrifugal force.	
<b>OPCION C:</b>	rudder deflection and slight opposite aileron throughout the turn.	

