
TEMA: 0621 ATP-RTC - Aerodynamics - Chap.3

COD PREG: PREG20097905	PREGUNTA: During an autorotation (collective pitch full down), what is an increase in rotor RPM associated with?	RPTA: A
OPCION A:	An increase in airflow through the rotor system.	
OPCION B:	A decrease in airflow through the rotor system.	
OPCION C:	A decrease in airspeed.	
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PREG20097898	How should a quick stop be initiated?	B
OPCION A:	Raise collective pitch.	
OPCION B:	Apply aft pitch.	
OPCION C:	Decrease RPM while raising collective pitch.	
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PREG20097899	How does Vne speed vary with altitude?	C
OPCION A:	Varies directly with altitude.	
OPCION B:	Remains the same at all altitudes.	
OPCION C:	Varies inversely with altitude.	
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PREG20097900	What limits the high airspeed potential of a helicopter?	B
OPCION A:	Harmonic resonance.	
OPCION B:	Retreating blade stall.	
OPCION C:	Rotor RPM limitations.	
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PREG20097901	What corrective action can a pilot take to recover from settling with power?	C
OPCION A:	Increase forward speed and raise collective pitch.	
OPCION B:	Decrease forward speed and partially raise collective pitch.	
OPCION C:	Increase forward speed and partially lower collective pitch.	
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PREG20097903	During a hover, a helicopter tends to drift in the direction of a tail rotor thrust. What is the movement called?	A
OPCION A:	Translating tendency.	
OPCION B:	Transverse flow effect.	
OPCION C:	Gyroscopic precession.	
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PREG20097904	What is the purpose of the lead-lag (drag) hinge in a three-bladed, fully articulated helicopter rotor system?	B
OPCION A:	Offset lateral instability during autorotation.	
OPCION B:	Compensate for Coriolis effect.	
OPCION C:	Provide geometric balance.	

PREG20097906	What corrective action can a pilot take to prevent a retreating blade stall at its onset?	A
OPCION A:	Reduce collective pitch and increase rotor RPM.	
OPCION B:	Increase collective pitch and increase rotor RPM.	
OPCION C:	Reduce collective pitch and decrease rotor RPM.	

PREG20097915	Under what condition would it be necessary to cause the tail rotor to direct thrust to the left on an American-made helicopter?	B
OPCION A:	To maintain heading with a left crosswind.	
OPCION B:	To counteract the drag of the transmission during autorotation.	
OPCION C:	To execute hovering turns to the right.	

PREG20097908	How does high density altitude affect helicopter performance?	B
OPCION A:	Engine and rotor efficiency are increased.	
OPCION B:	Engine and rotor efficiency are reduced.	
OPCION C:	Engine efficiency is reduced, but rotor efficiency is increased.	

PREG20097909	How is the helicopter climb performance most adversely affected?	A
OPCION A:	Higher-than-standard temperature and high relative humidity.	
OPCION B:	Lower-than-standard temperature and high relative humidity.	
OPCION C:	Higher-than-standard temperature and low relative humidity.	

PREG20097910	What causes Coriolis effect?	C
OPCION A:	Differential thrust of rotor blades.	
OPCION B:	Changing angle of attack of blades during rotation.	
OPCION C:	Shift in center of mass of flapping blade.	

PREG20097911	Why are the rotor blades more efficient when operating in ground effect?	A
OPCION A:	Induced drag is reduced.	
OPCION B:	Induced angle of attack is increased.	
OPCION C:	Downwash velocity is accelerated.	

PREG20097912	What result does a level turn have on the total lift force and load factor?	C
OPCION A:	Lift force remains constant and the load factor increases.	
OPCION B:	Lift force increases and the load factor decreases.	
OPCION C:	Both total lift force and load factor increase.	

PREG20097913	What causes a helicopter to turn?	B
OPCION A:	Centrifugal force.	
OPCION B:	Horizontal component of lift.	
OPCION C:	Greater angle of attack of rotor blades on upward side of the rotor disc.	

PREG20097914	What is the primary purpose of the tail rotor system?	C
OPCION A:	Maintain heading during forward flight.	
OPCION B:	Act as a rudder to assist in coordinated turns.	
OPCION C:	Counteract the torque effect of the main rotor.	

PREG20097897	How should a pilot execute a pinnacle-type approach to a rooftop heliport in conditions of high wind and turbulence?	A
OPCION A:	Steeper-than-normal approach, maintaining the desired angle of descent with collective.	
OPCION B:	Normal approach, maintaining a slower-than-normal rate of descent with cyclic.	
OPCION C:	Shallow approach, maintaining a constant line of descent with cyclic.	

PREG20097916	Which statement describes the term "VTOSS"?	B
OPCION A:	The takeoff safety speed in a turbine-engine powered transport category airplane.	
OPCION B:	The takeoff safety speed in a Category A helicopter.	
OPCION C:	The takeoff stall speed in the takeoff configuration in a turbo-propeller powered airplane.	

PREG20097907	Which is a major warning of approaching retreating blade stall?	C
OPCION A:	High frequency vibration.	
OPCION B:	Tendency to roll opposite the stalled side of the rotor.	
OPCION C:	Pitchup of the nose.	

PREG20097896	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	

PREG20097902	The lift differential that exists between the advancing main rotor blade and the retreating main rotor blade is known as	B
OPCION A:	Coriolis effect.	
OPCION B:	dissymmetry of lift.	
OPCION C:	translating tendency.	

PREG20097894	What true airspeed and angle of attack should be used to generate the same 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	

PREG20097895	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	

PREG20097876	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	

PREG20097877	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	

PREG20097879	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	

PREG20097880	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	

PREG20097881	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	

PREG20097882	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	

PREG20097883	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	

PREG20097884	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	

PREG20097878	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	

PREG20097886	What is the ratio between the total air load imposed on the rotor disc and the gross weight of a helicopter in flight?	B
OPCION A:	Power loading.	
OPCION B:	Load factor.	
OPCION C:	Aspect ratio.	

PREG20097885	If an aircraft with a gross weight of 2,000 pounds were subjected to a total load of 6,000 pounds in flight, the load factor would be	B
OPCION A:	2 Gs.	
OPCION B:	3 Gs	
OPCION C:	9 Gs.	

PREG20097891	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	

PREG20097890	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	

PREG20097892	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

PREG20097888 What is the reason for variations in geometric pitch along a propeller or rotor blade? A

OPCION A: It permits a relatively constant angle of attack along its length when in cruising flight.

OPCION B: It prevents the portion of the blade near the hub or root from stalling during cruising flight.

OPCION C: It permits a relatively constant angle of incidence along its length when in cruising flight.

PREG20097887 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

PREG20097889 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

PREG20097893 What will be the ratio between airspeed and lift if the angle 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
