

Turning and load factor

- 1 An aircraft is turning at constant velocity. If the angle of bank increases:
 - a) the radius of the turn increases.
 - b) the load factor decreases.
 - c) the velocity decreases.
 - d) the radius of the turn decreases.

- 2 In the circuit when the aircraft is flying at low speeds, steep turns should be avoided because:
 - a) the load factor will increase, resulting in a higher stalling speed.
 - b) the pilot may lose sight of the runway and other aircraft.
 - c) the load factor will decrease.
 - d) the aircraft will slip into the turn.

- 3 An aircraft which has been flying straight and level begins a level turn and maintains a constant IAS in the turn. The drag will:
 - a) decrease because the lift decreases.
 - b) remain constant because the IAS is constant.
 - c) increase because the profile drag decreases.
 - d) increase because the induced drag increases.

- 4 For an aircraft to make a rate one turn:
 - a) there is only one correct speed, and one corresponding bank angle.
 - b) it may be done at any speed but there is only one correct bank angle.
 - c) there is only one correct speed, but any bank angle may be chosen.
 - d) it may be done at any speed, but the higher the speed the greater the bank angle.

- 5 If the load factor was kept constant during a level co-ordinated turn:
 - a) a decrease in airspeed would result in an increase in radius
 - b) an increase in airspeed would result in an increase in radius
 - c) an increase in airspeed would result in a decrease in radius
 - d) a decrease in airspeed would result in a decrease in rate of turn

- 6 In a turn at a constant IAS the drag will be:
 - a) the same as in level flight because the IAS is the same
 - b) less than in level flight because the lift is less
 - c) more than in level flight because the induced drag is greater
 - d) more than in level flight because the parasite drag is greater

- 7 In coordinated flight for any specific bank, the faster the speed the
- a) greater the radius and the faster the rate of turn
 - b) smaller the radius and the faster the rate of turn
 - c) greater the radius and the slower the rate of turn
 - d) greater the load factor and rate of turn
- 8 During a climbing turn:
- a) the rate of climb increases compared to climbing straight ahead
 - b) the aircraft underbanks
 - c) the lift required decreases compared to a level turn
 - d) the rate of climb is reduced compared to climbing straight ahead
- 9 In the circuit when the aircraft is flying at slow speed, steep turns should be avoided because:
- a) the pilot may lose sight of the runway and other aircraft
 - b) the load factor will increase, resulting in a higher stalling speed
 - c) the load factor will decrease
 - d) the aircraft will slip into the turn
- 10 As bank angle is increased in a turn at a constant IAS, the load factor will:
- a) increase in direct proportion to the bank angle
 - b) increase at an increasing rate
 - c) decrease
 - d) remain the same
- 11 In a turn the stalling speed will be:
- a) more than in level flight and at the same angle of attack
 - b) the same as in level flight
 - c) less than in level flight
 - d) more than in level flight and at a lower angle of attack
- 12 The additional load imposed on the wings during a level co-ordinated turn in smooth air is dependent on the:
- a) angle of bank
 - b) rate of turn
 - c) radius
 - d) true airspeed

- 13 What increase in the load factor would take place if the angle of bank were increased from 45° to 60°
- a) 0.5 g
 - b) 1.0g
 - c) 1.5 g
 - d) 2.0 g
- 14 If airspeed decreases during a level turn, the action to maintain altitude is
- a) to decrease the angle of attack or increase the angle of bank
 - b) to increase the angle of attack and the angle of bank
 - c) to increase the angle of attack or decrease the angle of bank
 - d) to increase speed only
- 15 What is the stall speed of an aircraft under a load factor of 2 if the unaccelerated stall speed is 80 kt:
- a) 90 kt
 - b) 160 kt
 - c) 112 kt
 - d) 120 kt
- 16 Increasing the airspeed while maintaining a constant load factor during a level co-ordinated turn would result in:
- a) the same rate of turn
 - b) the same radius of turn
 - c) a decrease in the radius of turn
 - d) an increase in the radius of turn
- 17 If, during a level turn, the speed is increased and the rate of turn is kept constant:
- a) the load factor will remain constant regardless of changes in angle of bank
 - b) the angle of bank will need to be reduced
 - c) the angle of bank will need to be maintained
 - d) the load factor will increase
- 18 The angle of attack is increased during a turn to:
- a) compensate for increased drag
 - b) compensate for the reduced horizontal component of lift
 - c) increase the rate of turn
 - d) compensate for reduced vertical component of lift

- 19 To maximise turn performance and achieve the minimum radius possible the aircraft would be configured:
- a) full power, slow speed, clean and maximum possible angle of bank
 - b) low power, slow speed, flaps and maximum possible angle of bank
 - c) full power, slow speed, some flap and maximum possible angle of bank
 - d) low power to achieve slow flight, some flap and low angle of bank
- 20 Two aircraft of different weight are in a steady turn at the same bank angle:
- a) the heavier aircraft would have a higher 'g' load due to increased lift required
 - b) the lighter aircraft would have a higher 'g' load
 - c) the heavier aircraft would have a higher 'g' load due to increased load factor
 - d) they would both have the same 'g' load
- 21 Skidding in a turn is caused by:
- a) insufficient angle of bank
 - b) too much angle of bank
 - c) the speed being too slow
 - d) raising the nose too high
- 22 When the load factor is kept constant during a level coordinated turn, it is true to say that
- a) an increase in airspeed would result in the same turn radius
 - b) an increase in airspeed results in a decrease in turn radius
 - c) an increase in airspeed results in an increase in turn radius
 - d) a decrease in airspeed results in an increase in turn radius
- 23 If the rate of turn is varied while holding the angle of bank constant in a level turn, the load factor would
- a) remain constant
 - b) vary depending upon speed
 - c) vary depending upon weight
 - d) increase

- 24 In a level banked turn, the aircraft stalling speed
- a) decreases.
 - b) increases.
 - c) is unaffected.
 - d) decreases then increase.
- 25 In a turn at a constant IAS the drag will be:
- a) the same as in level flight because the IAS is the same
 - b) less than in level flight because the lift is less
 - c) more than in level flight because the induced drag is greater
 - d) more than in level flight because the parasite drag is greater
- 26 When an aircraft is banked, the horizontal component of the lift :
- a) will tend to make the aircraft follow a circular path.
 - b) will oppose the tendency of the aircraft to follow a circular path.
 - c) will oppose the weight thus requiring more total lift in the turn.
 - d) creates the centrifugal force to accelerate the aircraft in the turn.
- 27 If, during a level turn, the speed is decreased and the rate of turn is kept constant:
- a) the load factor will remain constant regardless of changes in angle of bank
 - b) the angle of bank will need to be reduced
 - c) the angle of bank will need to be maintained
 - d) the load factor will decrease
- 28 Slipping in a turn is caused by
- a) insufficient angle of bank
 - b) insufficient rudder
 - c) too much rudder
 - d) too much angle of bank
- 29 An aircraft in a climbing turn will
- a) tend to underbank
 - b) tend to overbank
 - c) tend to slip into the turn
 - d) tend to skid out of the turn

- 30 An aircraft in a descending turn will
- a) tend to slip out of the turn
 - b) tend to overbank
 - c) tend to underbank
 - d) tend to roll into the turn
- 31 In a climbing turn , an aircraft tends to overbank or roll into the turn. This is because
- a) the outer wing is travelling faster and producing more lift
 - b) the inner wing is producing more drag
 - c) the aircraft has spiral instability
 - d) the aircraft has insufficient lateral stability

Answers

1.d 2.a 3.d 4.d 5.b 6.c 7.c 8.d 9.b 10.b 11.a 12a 13.a
14.c 15.c 16.d 17.d 18.d 19.c 20.d 21.a 22.c 23.a
24.b 25.c 26.a 27.d 28.b 29.b 30.c 31.a