

LESSON 3

Score: _____

- [1] The direct cause of every stall is excessive
- A. upward vertical velocity.
 - B. angle of attack.
 - C. density altitude.

[2] If an airplane weighs 4,500 pounds, what approximate weight would the airplane structure be required to support during a 45° banked turn while maintaining altitude?

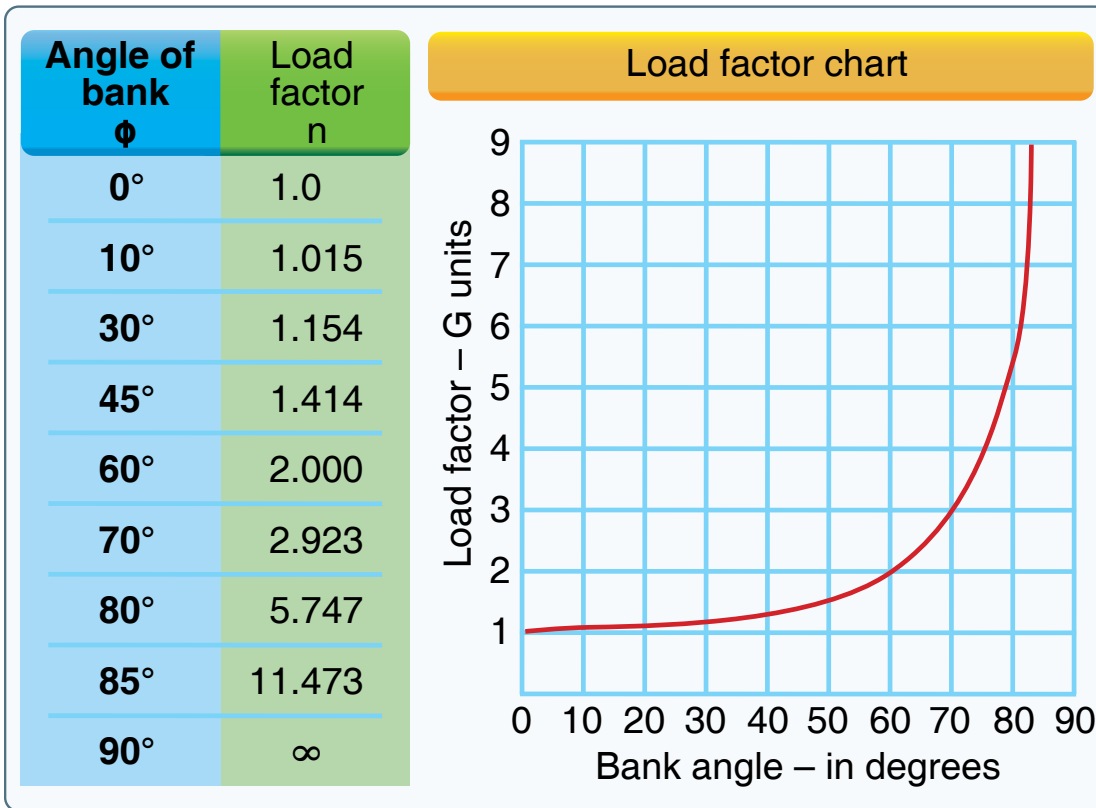


Figure 2. Load factor chart.

- A. 4,500 pounds.
 - B. 6,750 pounds.
 - C. 7,200 pounds.
- [3] During an approach to a stall, an increased load factor will cause the airplane to
- A. have a tendency to spin.
 - B. be more difficult to control.
 - C. stall at a higher airspeed.

[4] What speed is represented by point B?

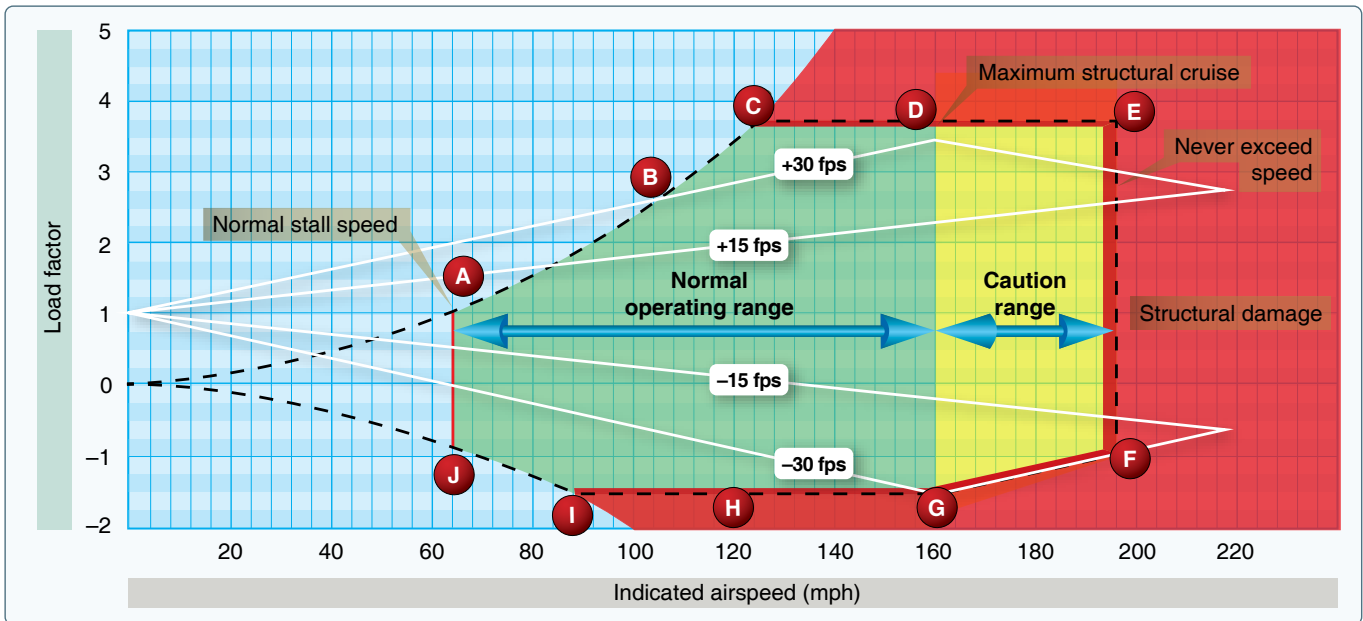


Figure 73. Velocity vs. G-loads.

- A. V_G .
- B. V_A .
- C. V_Y .

[5] (Refer to the picture from the previous question) If you are flying at 120 knots indicated airspeed and encounter a sudden 4G downdraft, what will be the effect on the airplane?

- A. The airplane will be overstressed and possibly damaged.
- B. The airplane will stall before structural damage is caused.
- C. The airplane will experience an engine failure due to instantaneous fuel exhaustion.

[6] When does P-factor cause the airplane to yaw to the left?

- A. When at high airspeeds.
- B. When at low angles of attack.
- C. When at high angles of attack.

[7] What force makes an airplane turn?

- A. Centrifugal force.
- B. The horizontal component of lift.
- C. The vertical component of lift.

[8] (Refer to Figure in question #2.) If an airplane weighs 2,300 pounds, what approximate weight would the airplane structure be required to support during a 60° banked turn while maintaining altitude?

- A. 4,600 pounds.
- B. 3,400 pounds.
- C. 2,300 pounds.

- [9] What is ground effect?
- 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 wings of an airplane to the point where the wings will no longer support the airplane in flight.
- [10] Loading an airplane to the most aft CG will cause the airplane to be
- A. less stable at all speeds.
 - B. less stable at slow speeds, but more stable at high speeds.
 - C. less stable at high speeds, but more stable at low speeds.
- [11] Which basic flight maneuver increases the load factor on an airplane as compared to straight-and-level flight?
- A. Turns.
 - B. Stalls.
 - C. Climbs.
- [12] Name the four fundamentals involved in maneuvering an aircraft.
- A. Straight-and-level flight, turns, climbs, and descents.
 - B. Power, pitch, bank, and trim.
 - C. Thrust, lift, turns, and glides.
- [13] What is the relationship of lift, drag, thrust, and weight when the airplane is in straight-and-level flight?
- A. Lift and weight equal thrust and drag.
 - B. Lift equals weight and thrust equals drag.
 - C. Lift, drag, and weight equal thrust.
- [14] During a spin to the left, which wing(s) is/are stalled?
- A. Only the left wing is stalled.
 - B. Both wings are stalled.
 - C. Neither wing is stalled.
- [15] What must a pilot be aware of as a result of ground effect?
- A. Induced drag decreases; therefore, any excess speed at the point of flare may cause considerable floating.
 - B. A full stall landing will require less up elevator deflection than would a full stall when done free of ground effect.
 - C. Wingtip vortices increase creating wake turbulence problems for arriving and departing aircraft.
- [16] The term "angle of attack" is defined as the angle
- A. between the airplane's climb angle and the horizon.
 - B. between the wing chord line and the relative wind.
 - C. formed by the longitudinal axis of the airplane and the chord line of the wing.
- [17] What determines the longitudinal stability of an airplane?
- A. The effectiveness of the horizontal stabilizer, rudder, and rudder trim tab.
 - B. The relationship of thrust and lift to weight and drag.
 - C. The location of the CG with respect to the center of lift.

- [18] The left turning tendency of an airplane caused by P-factor is the result of the
- A. gyroscopic forces applied to the rotating propeller blades acting 90° in advance of the point the force was applied.
 - B. propeller blade descending on the right, producing more thrust than the ascending blade on the left.
 - C. clockwise rotation of the engine and the propeller turning the airplane counterclockwise.
- [19] What is one purpose of wing flaps?
- A. To decrease wing area to vary the lift.
 - B. To enable the pilot to make steeper approaches to a landing without increasing the airspeed.
 - C. To relieve the pilot of maintaining continuous pressure on the controls.
- [20] When are the four forces that act on an airplane in equilibrium?
- A. When the aircraft is accelerating.
 - B. During unaccelerated flight.
 - C. When the aircraft is at rest on the ground.