

C-17 Pilot Initial Qualification (PIQ) End Of Course Practice Test (Sample)

Study Guide



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SAMPLE

Questions

- 1. During cargo jettison procedures, logistic locks may not release when the deck angle exceeds _____ degrees.**
 - A. 1.5**
 - B. 2.4**
 - C. 3.2**
 - D. 4.8**

- 2. What does it indicate when the MASTER CAUTION, LOOP cue, and No. 2 ENG LOOP A lights are illuminated?**
 - A. Engine No. 2 is on fire and should be shut down.**
 - B. Loop B is faulty and should be selected to the OFF position.**
 - C. The system has malfunctioned and is unreliable.**
 - D. Loop A is faulty and no fire exists.**

- 3. What must be done to use the stored heading alignment mode in the inertial reference system?**
 - A. In-flight alignment**
 - B. Gyrocompass (GC) alignment**
 - C. BATH alignment**
 - D. Attitude alignment**

- 4. Where is the oxygen control panel for the passenger/auxiliary oxygen system located?**
 - A. At the forward loadmaster station.**
 - B. At the instructor loadmaster station.**
 - C. At the aft left loadmaster station.**
 - D. At the aft right loadmaster station.**

- 5. The _____ detent on the flap/slat handle is used for takeoff.**
 - A. UP/RETR (flaps and slats retracted)**
 - B. 0/RETR (flaps retracted, slats extended)**
 - C. ½ (flaps and slats extended)**
 - D. FULL (flaps and slats extended)**

- 6. For structural damage associated with a wing, why should fuel dump be avoided?**
- A. Wing loading or bending.**
 - B. Difficulty in seeing damage during jettison.**
 - C. The potential fire hazard.**
 - D. Extra fuel demand.**
- 7. What does the ESC's isolation of the left manifold indicate?**
- A. The system is still operational.**
 - B. There is a serious malfunction.**
 - C. The aircraft could be destabilized.**
 - D. The emergency procedures should be followed.**
- 8. With the autopilot or flight director engaged, what happens if you move the vertical speed wheel more than 200 fpm?**
- A. Vertical speed mode will engage.**
 - B. The aircraft will level off.**
 - C. The autopilot will disengage.**
 - D. An alarm will sound.**
- 9. What happens if the flotation equipment deployment system is activated before the aircraft is at rest?**
- A. Deployment will be unsuccessful**
 - B. Equipment may jam**
 - C. Emergency systems will fail**
 - D. Crew members may be injured**
- 10. In the event of a manifold failure, what indication will be present?**
- A. No warnings, but automatic systems take control**
 - B. The CAWS warning horn indicates if the system does not shut down**
 - C. The manifold fail lights illuminate without any additional warning**
 - D. A CAWS attention sound and aural message of "MANIFOLD FAIL"**

Answers

SAMPLE

- 1. A**
- 2. D**
- 3. B**
- 4. A**
- 5. C**
- 6. A**
- 7. A**
- 8. A**
- 9. D**
- 10. D**

SAMPLE

Explanations

SAMPLE

1. During cargo jettison procedures, logistic locks may not release when the deck angle exceeds _____ degrees.

A. 1.5

B. 2.4

C. 3.2

D. 4.8

The correct answer is that logistic locks may not release when the deck angle exceeds 1.5 degrees. This is a crucial aspect of cargo jettison procedures because the logistic locks are designed to secure the cargo during flight and prevent unintended release. Maintaining proper deck angle control is essential to ensuring that the cargo remains secure until it is safe to jettison. When the deck angle exceeds 1.5 degrees, there is a risk that the stresses on the locks can increase, potentially preventing them from functioning correctly. This threshold is set to ensure that the mechanisms operate reliably, and exceeding it could compromise the safety of the cargo jettison process. Understanding this limitation is vital for pilots to execute cargo jettison operations safely and effectively, as any miscalculation or misinterpretation of this angle can lead to mishaps during critical phases of flight.

2. What does it indicate when the MASTER CAUTION, LOOP cue, and No. 2 ENG LOOP A lights are illuminated?

A. Engine No. 2 is on fire and should be shut down.

B. Loop B is faulty and should be selected to the OFF position.

C. The system has malfunctioned and is unreliable.

D. Loop A is faulty and no fire exists.

When the MASTER CAUTION, LOOP cue, and No. 2 ENG LOOP A lights are illuminated, it indicates that Loop A is experiencing a fault, which makes it unreliable for providing accurate data regarding engine parameters. This situation arises because the illumination specifically refers to a malfunction in Loop A without indicating the presence of a fire. The condition suggests that while Loop A is not functioning as intended, it does not necessarily mean that there's an immediate emergency, such as an engine fire. Consequently, the pilot can take appropriate actions based on the nature of the malfunction, primarily by relying on Loop B for accurate readings. Ensuring the functionality of the backup loop is crucial, thus allowing the pilot to continue operations safely until the situation can be diagnosed and resolved. In this case, the illumination of the lights does not point to a need for drastic measures like shutting down the engine, as there is no indication of fire, supporting the conclusion that Loop A is simply faulty.

3. What must be done to use the stored heading alignment mode in the inertial reference system?

- A. In-flight alignment**
- B. Gyrocompass (GC) alignment**
- C. BATH alignment**
- D. Attitude alignment**

To use the stored heading alignment mode in the inertial reference system, gyrocompass (GC) alignment is required. This process involves aligning the inertial navigation system to true north based on the aircraft's heading and position information. Gyrocompass alignment allows the inertial reference system to accurately reference the aircraft's orientation in space. This alignment technique uses the principles of gyroscopic precession to maintain orientation, enabling the system to stabilize and provide reliable heading data once the aircraft is in motion. The gyrocompass operates independently of the earth's magnetic field, which is particularly beneficial in environments where magnetic influences may cause discrepancies. The other alignment methods—such as in-flight alignment, BATH alignment, and attitude alignment—serve different purposes or are specific to different operational contexts within the inertial reference system and do not directly facilitate the stored heading alignment mode in the way that gyrocompass alignment does.

4. Where is the oxygen control panel for the passenger/auxiliary oxygen system located?

- A. At the forward loadmaster station.**
- B. At the instructor loadmaster station.**
- C. At the aft left loadmaster station.**
- D. At the aft right loadmaster station.**

The oxygen control panel for the passenger/auxiliary oxygen system is located at the forward loadmaster station. This placement is practical because it allows the loadmaster to efficiently manage and monitor the oxygen supply for passengers and crew when needed. The forward loadmaster station is typically the first point of contact for overseeing the passenger cabin area during flight, facilitating quicker response times in case of an emergency that requires oxygen deployment. Additionally, this location is strategic, enabling the loadmaster to communicate with pilots and ensure that all procedures regarding oxygen usage are followed seamlessly.

5. The _____ detent on the flap/slat handle is used for takeoff.

- A. UP/RETR (flaps and slats retracted)
- B. 0/RETR (flaps retracted, slats extended)
- C. $\frac{1}{2}$ (flaps and slats extended)**
- D. FULL (flaps and slats extended)

The correct answer indicates that the $\frac{1}{2}$ detent on the flap/slat handle is specifically used for takeoff configuration. In aircraft operations, particularly for the C-17, the $\frac{1}{2}$ position allows for a balanced configuration of flaps and slats, which is crucial for generating the necessary lift during takeoff while also ensuring stability. Using the $\frac{1}{2}$ detent strikes a balance between enhancing lift and maintaining aerodynamic efficiency, which is ideal as the aircraft transitions from ground to air. This detent is designed to provide optimal performance by allowing for a moderate increase in lift without unduly increasing drag, thus supporting a safer and more effective takeoff. The other options represent different configurations that do not align with standard takeoff practices for the C-17. The UP/RETR detent would be inappropriate for takeoff as it has the flaps and slats retracted, which reduces lift substantially. The 0/RETR configuration, where flaps are retracted and slats extended, is not suitable for takeoff either since it doesn't provide sufficient lift augmentation. The FULL detent, while providing maximum lift, may introduce significant drag and control challenges, making it less favorable for standard takeoff procedures.

6. For structural damage associated with a wing, why should fuel dump be avoided?

- A. Wing loading or bending.**
- B. Difficulty in seeing damage during jettison.
- C. The potential fire hazard.
- D. Extra fuel demand.

When considering structural damage associated with a wing, avoiding a fuel dump is primarily due to the concern over wing loading or bending. When fuel is jettisoned, it can rapidly change the weight distribution and aerodynamic characteristics of the aircraft. This sudden loss of weight can lead to shifts in load on the wings, potentially exacerbating existing structural weaknesses or damages. The wing is designed to carry specific loads, and altering this balance can compromise its integrity. At critical moments, such as during maneuvers or flight phases that involve stress on the wings, having excess fuel may help mitigate bending moments. Removing fuel can lead to an increased risk of structural failure, especially if the wing is already compromised. Understanding this aspect is crucial for pilots, as they must always operate within safety margins to ensure the aircraft can handle unexpected stresses without leading to greater risk of failure. Thus, managing weight and load distributions carefully becomes vital when any structural concerns arise.

7. What does the ESC's isolation of the left manifold indicate?

- A. The system is still operational.**
- B. There is a serious malfunction.**
- C. The aircraft could be destabilized.**
- D. The emergency procedures should be followed.**

The isolation of the left manifold by the Engine Shutoff Controller (ESC) indicates that the system is still operational. This suggests that the ESC has successfully isolated a potential failure point within the manifold system, allowing the remaining systems to continue functioning normally. This immediate isolation can be a precautionary measure to maintain overall aircraft safety and performance while managing specific components that may be under stress or malfunctioning. In this context, while the ESC is addressing an issue, it does so in a way that allows the aircraft to maintain operational capability rather than indicating a catastrophic failure or necessitating emergency procedures. The isolation is a tactical response to prevent further complications without compromising the flight safety or control of the aircraft.

8. With the autopilot or flight director engaged, what happens if you move the vertical speed wheel more than 200 fpm?

- A. Vertical speed mode will engage.**
- B. The aircraft will level off.**
- C. The autopilot will disengage.**
- D. An alarm will sound.**

When the autopilot or flight director is engaged and the vertical speed wheel is moved more than 200 feet per minute (fpm), vertical speed mode will engage. This action effectively commands the autopilot to adjust the aircraft's vertical speed according to the new setting. In this context, vertical speed mode allows the pilot to specify the rate of climb or descent. By exceeding the 200 fpm threshold on the vertical speed wheel, the autopilot transitions to maintain the desired vertical speed that the pilot has selected. This capability is essential for managing altitude changes efficiently and safely during flight. Understanding this function is crucial for pilots, as it facilitates precise management of aircraft altitude and ensures compliance with air traffic control instructions and flight plans.

9. What happens if the flotation equipment deployment system is activated before the aircraft is at rest?

- A. Deployment will be unsuccessful**
- B. Equipment may jam**
- C. Emergency systems will fail**
- D. Crew members may be injured**

When the flotation equipment deployment system is activated before the aircraft is at rest, the most significant consequence is that crew members may be injured. Activating the flotation system while the aircraft is still in motion could cause the equipment to deploy improperly, leading to unexpected forces and movements that can put crew members at risk. This can happen because the sudden deployment of flotation gear can create sudden changes in the aircraft's center of gravity or cause physical hazards, such as the flotation devices themselves impacting crew members. The other outcomes suggested by the other options, such as unsuccessful deployment, equipment jamming, or emergency systems failing, may not necessarily occur solely due to the timing of activation, but the priority concern remains the safety of crew members during such critical situations. Ensuring that all systems are activated only when the aircraft is completely stationary helps mitigate risks and enhances safety.

10. In the event of a manifold failure, what indication will be present?

- A. No warnings, but automatic systems take control**
- B. The CAWS warning horn indicates if the system does not shut down**
- C. The manifold fail lights illuminate without any additional warning**
- D. A CAWS attention sound and aural message of "MANIFOLD FAIL"**

When a manifold failure occurs, the correct indication involves a CAWS (Centralized Aural Warning System) attention sound along with an aural message stating "MANIFOLD FAIL." This alerts the crew to the specific issue that has arisen, providing both an auditory cue and a clear message regarding the nature of the failure. The combination of the sound and the precise message ensures that the flight crew is immediately informed of the problem, allowing them to take appropriate and timely action to address the situation. The CAWS system is designed to prioritize critical alerts, which enhances situational awareness in response to failures. The focus on clear communication is vital in aviation safety, making this option the most effective in conveying the necessary information during an emergency scenario.