IRC Mission Qualification Flight (MQF) Practice Test (Sample)

Study Guide

Everything you need from our exam experts!

Questions

1. What is the US TERPS expanded circling area for category C aircraft with a Minimum Descent Altitude of 3500 MSL?

A. 2.5 NM

B. 2.9 NM

C. 3.1 NM

D. 3.5 NM

2. What is the preferred method for descent during the final approach of a non-precision approach?

A. Classic Descent Technique

B. Constant Descent Final Approach

C. Step-down Descent Method

D. Standard Flare Procedure

3. What is the proper way to dispose of outdated FLIP?

A. Throwing it directly in the trash

B. Recycling and removing covers before disposal

C. Recycling or separating the books into at least two sections before throwing away

D. Burning or shredding it

4. When is navigation using a TACAN permitted?

A. If valid azimuth information is available

B. If valid range information is available

C. If both valid azimuth and range information are available

D. If no other NAVAIDs are available

5. Which of the following actions is permitted if the PIC finds the aircraft is not airworthy?

A. Proceed with the flight

B. Delay the flight until engineers can assess

C. Cancel the flight immediately

D. Return to the home base

6. What is one responsibility of the PIC regarding the aircraft's airworthiness?

A. Accept any aircraft for flight

B. Conduct all maintenance

C. Not accept the aircraft if suspected not airworthy

D. Manage passenger safety

7. When must manual navigation (dead reckoning) be employed?

A. When flying at high altitudes

B. When all navigation systems become unavailable

C. When under visual flight rules

D. During flight training operations

8. If a pilot continues past the MDA, who is responsible for ensuring obstacle clearance?

A. The airline dispatcher

B. Air Traffic Control

C. The pilot

D. The co-pilot

9. What is the typical temperature lapse rate post-36,000 ft according to standard atmosphere definitions?

A. -1.98C per 1,000 ft

B. 0C

C. -3.5C per 1,000 ft

D. -6.5C per 1,000 ft

10. An aircraft with a maximum certificated take-off mass of 295,000 pounds falls into which ICAO wake turbulence class?

A. LIGHT

B. MEDIUM

C. HEAVY

D. SUPER

Answers

1. B
2. B
3. C
4. C
5. C
6. C
7. B
8. C
9. B
10. B

Explanations

1. What is the US TERPS expanded circling area for category C aircraft with a Minimum Descent Altitude of 3500 MSL?

A. 2.5 NM

B. 2.9 NM

C. 3.1 NM

D. 3.5 NM

The correct answer is based on the established criteria defined in the Terminal Instrument Procedures (TERPS) for circling approaches, which specifically provide guidelines on how to define the expanded circling area for aircraft based on their categories and Minimum Descent Altitudes (MDAs). For Category C aircraft, which typically include larger jets with a higher approach speed, the expanded circling area is determined in relation to the MDA and the aircraft's characteristics. The standard for the expanded circling area calculations establishes that for a Minimum Descent Altitude of 3500 feet Mean Sea Level (MSL), the applicable distance is set at 2.9 nautical miles from the runway centerline. This distance is crucial for ensuring safety and separation during landing maneuvers, particularly when visual references may be limited, and it allows pilots of Category C aircraft to maintain safe distances while maneuvering in the circling pattern. The expansion accounts for factors such as the aircraft's speed and the required clearance from terrain, which are vital for safe operations during the approach and landing phases. In comparison, the other distances listed do not align with the specifically outlined parameters for Category C aircraft at that MDA, which confirms that 2.9 NM is indeed the correct choice

2. What is the preferred method for descent during the final approach of a non-precision approach?

A. Classic Descent Technique

B. Constant Descent Final Approach

C. Step-down Descent Method

D. Standard Flare Procedure

The preferred method for descent during the final approach of a non-precision approach is the Constant Descent Final Approach. This technique ensures a more controlled and consistent descent rate, allowing pilots to manage altitude and airspeed effectively. By maintaining a constant descent angle, pilots can also optimize glide path accuracy, which is essential in non-precision approaches where there's no precise vertical guidance. Utilizing a constant descent helps in reducing workload as it minimizes the need for constant adjustments to the throttle and pitch attitude. It allows for a smoother transition to landing configuration and enhances situational awareness, especially in visual approaches where obstacles may be present. This method also fits well within the confines of other traffic and airspace considerations, making it a safer choice during final approach. Other methods, while valid, introduce variability or increased pilot workload, which is not ideal during the critical phase of approach and landing. Therefore, the Constant Descent Final Approach is recognized as the best practice for safely and effectively managing descent in a non-precision approach scenario.

3. What is the proper way to dispose of outdated FLIP?

A. Throwing it directly in the trash

B. Recycling and removing covers before disposal

C. Recycling or separating the books into at least two sections before throwing away

D. Burning or shredding it

The proper method for disposing of outdated FLIP (Flight Information Publication) materials emphasizes the importance of safeguarding sensitive information, especially in aviation and military contexts. When flight information publications become outdated, they can still contain critical data that could pose a security risk if not disposed of properly. Separating the books into at least two sections before disposing of them helps ensure that no single publication remains intact, making it more difficult for unauthorized individuals to access potentially sensitive information. This method is a responsible approach to ensuring that data is not just discarded haphazardly but rather handled with the care required to protect the integrity of the information. While options involving simple disposal or recycling without appropriate precautions might be more convenient, they fail to adequately address the risks associated with unauthorized access to the information contained within these publications. Hence, the correct method highlights the need for diligence in information security standards when disposing of aviation-related materials.

4. When is navigation using a TACAN permitted?

A. If valid azimuth information is available

B. If valid range information is available

C. If both valid azimuth and range information are available

D. If no other NAVAIDs are available

Navigation using a Tactical Air Navigation (TACAN) system is permitted when both valid azimuth and range information are available. TACAN provides pilots with precise directional and distance information to a navigational aid or station, which is crucial for accurate navigation and situational awareness. Using just azimuth information without range could lead to significant errors in determining the aircraft's position, as it indicates direction but does not provide information on how far away the navigation aid is. Similarly, having only range information without azimuth would tell the pilot how far they are from the station but would not provide the necessary directional information to accurately reach their destination. Additionally, relying solely on eligibility related to the availability of other NAVAIDs does not ensure that the navigation using TACAN is reliable or precise. It is the combination of both azimuth and range that provides a complete and accurate navigational picture, enabling pilots to navigate safely and effectively.

5. Which of the following actions is permitted if the PIC finds the aircraft is not airworthy?

A. Proceed with the flight

B. Delay the flight until engineers can assess

C. Cancel the flight immediately

D. Return to the home base

When the Pilot-in-Command (PIC) determines that the aircraft is not airworthy, the appropriate and permitted action is to cancel the flight immediately. This decision is critical for ensuring the safety of the flight, as an aircraft that is not deemed airworthy poses potential risks to the occupants and those on the ground. Cancelling the flight allows the PIC to prioritize safety and prevents any further risk by grounding the aircraft until it can be thoroughly assessed and repaired if necessary. The responsibility of the PIC includes making sound decisions regarding the aircraft's condition, and ensuring that every flight is conducted in compliance with safety regulations and standards is paramount. Other options may seem feasible, but they do not align with the fundamental principle of aviation safety. Delaying the flight until engineers can assess may introduce further risk by prolonging the situation without a clear determination of the aircraft's safety status. Proceeding with the flight despite the aircraft being deemed unairworthy directly violates regulatory requirements and can lead to serious consequences. Returning to the home base may not be an option if the aircraft systems have already failed or are deemed unsafe for operation. Thus, the most responsible and correct course of action is to cancel the flight immediately.

6. What is one responsibility of the PIC regarding the aircraft's airworthiness?

A. Accept any aircraft for flight

B. Conduct all maintenance

C. Not accept the aircraft if suspected not airworthy

D. Manage passenger safety

The responsibility of the Pilot in Command (PIC) regarding the aircraft's airworthiness primarily involves ensuring that the aircraft is safe to operate before takeoff. This includes not accepting the aircraft for flight if there is any suspicion or indication that the aircraft is not airworthy. The PIC must conduct a careful pre-flight inspection and assess the aircraft's condition, which encompasses reviewing maintenance records, performing visual checks, and making judgments based on the overall state of the aircraft. This principle is rooted in aviation safety regulations, which hold the PIC accountable for the safety of the flight. By rejecting an aircraft that may not meet airworthiness standards, the PIC takes an essential step in preventing potential accidents and ensuring a safe flying experience for all on board. This responsibility is paramount, as the well-being of passengers and the successful operation of the flight depend on the aircraft being fully compliant with airworthiness requirements. In contrast, accepting any aircraft for flight disregards the vital checks required for safety. Conducting all maintenance is typically outside the scope of the PIC's role, as this task is usually performed by qualified maintenance personnel. While managing passenger safety is important, it is a broader responsibility that encompasses various aspects of flight operations and does not specifically address the aircraft's airworthiness.

7. When must manual navigation (dead reckoning) be employed?

A. When flying at high altitudes

B. When all navigation systems become unavailable

C. When under visual flight rules

D. During flight training operations

Manual navigation, also known as dead reckoning, must be employed when all navigation systems become unavailable. This situation may arise due to equipment failure or other unforeseen circumstances that lead to a loss of electronic navigational aids. Dead reckoning relies on estimating one's current position based on a previously calculated position, taking into account factors such as speed, time, heading, and wind correction. This method becomes critical in scenarios where pilots cannot rely on GPS, inertial navigation systems, or other electronic means for determining their location. By using dead reckoning, pilots can maintain their course and make informed decisions to reach their destination safely, despite the lack of technological aids. In contrast, flying at high altitudes does not inherently trigger the need for manual navigation, as pilots might still have functional navigation systems available. Similarly, visual flight rules do not necessitate dead reckoning, since pilots can navigate using visual landmarks and references. During flight training operations, while manual navigation may be practiced, it is not a mandatory requirement compared to the necessity that arises from system failures.

8. If a pilot continues past the MDA, who is responsible for ensuring obstacle clearance?

A. The airline dispatcher

B. Air Traffic Control

C. The pilot

D. The co-pilot

The pilot is responsible for ensuring obstacle clearance if they continue past the Minimum Descent Altitude (MDA). MDA represents the lowest altitude to which a pilot can descend during an approach without visual reference to the runway or surrounding terrain. Once a pilot descends below this altitude, they must maintain situational awareness and actively manage the aircraft's descent to avoid obstacles in the area. This responsibility lies solely with the pilot because they have the ultimate authority over the flight and the necessary training to assess the situation, execute safe maneuvers, and ensure safety. Although assistance can be provided by air traffic control and other crew members, the pilot must make the final decisions during critical phases of flight like the approach and landing. The dispatcher and air traffic control can provide information and guidance, but they do not have the authority or ability to manage the aircraft's descent directly.

9. What is the typical temperature lapse rate post-36,000 ft according to standard atmosphere definitions?

A. -1.98C per 1,000 ft

B. 0C

C. -3.5C per 1,000 ft

D. -6.5C per 1,000 ft

In the context of standard atmospheric definitions, the correct temperature lapse rate post-36,000 feet is characterized as 0°C. This indicates that, above this altitude, the temperature remains constant with increasing altitude rather than decreasing. This is unique to the stratosphere, where the temperature stabilizes, primarily due to the presence of ozone that absorbs ultraviolet radiation and warms this layer of the atmosphere. This understanding aligns with the characteristics of the standard atmosphere model, which outlines how temperature changes with altitude in different atmospheric layers. Below 36,000 feet, a typical lapse rate observed is around -6.5°C per 1,000 feet, reflecting a decrease in temperature with altitude, which is normal for the troposphere where weather occurs. The stabilization of temperature in the stratosphere reflects the unique thermal dynamics of that atmospheric region. Thus, the selection of 0°C as the lapse rate post-36,000 ft accurately represents the behavior of temperature in the stratosphere, distinguishing it from the other lapse rates that apply to lower altitudes.

10. An aircraft with a maximum certificated take-off mass of 295,000 pounds falls into which ICAO wake turbulence class?

A. LIGHT

B. MEDIUM

C. HEAVY

D. SUPER

To determine the appropriate ICAO wake turbulence class, it is important to look at the maximum certificated take-off mass of the aircraft. The ICAO divides aircraft into different categories based on their take-off weights, which influence the wake turbulence they generate during flight. For an aircraft with a maximum certificated take-off mass of 295,000 pounds, it fits within the specifications for the "HEAVY" class, which applies to aircraft weighing more than 255,000 pounds but less than 1,000,000 pounds. This classification indicates that the aircraft generates significant wake turbulence, which can affect the safety and operations of following aircraft. In contrast, the "LIGHT" class is designated for aircraft with a maximum take-off mass of 15,500 pounds or less, while the "MEDIUM" class is for those weighing between 15,500 pounds and 255,000 pounds. The "SUPER" class is specifically reserved for the Airbus A380, which has a maximum take-off weight above the 1,000,000-pound threshold. Therefore, the classification of the aircraft as "HEAVY" is accurate, considering its weight, highlighting its potential to create wake turbulence that may impact other aircraft in its vicinity.