Instrument GL:6 – Holding and Instrument Approaches Practice Test (Sample)

Study Guide

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Questions

1. **If you receive a RAIM error while on the RNAV(GPS) RWY 30 approach, what should you do?**
   - A. Continue to the missed approach point and execute missed approach instructions
   - B. Abort the approach and circle around
   - C. Descend to the minimum safe altitude
   - D. Switch to an alternative navigation system

2. **Which displacement from the localizer centerline and glide slope indicates you are low and to the left of the ILS course?**
   - A. Figure 140
   - B. Figure 141
   - C. Figure 142
   - D. Figure 143

3. **What is the maximum indicated airspeed for civil aircraft while holding at 5,000 feet?**
   - A. 180 knots
   - B. 200 knots
   - C. 220 knots
   - D. 240 knots

4. **If RAIM is not available before a GPS approach, what should the pilot do?**
   - A. Use an alternate navigation system
   - B. Proceed with the GPS approach anyway
   - C. Delay the approach until RAIM is restored
   - D. Switch to VOR navigation

5. **In reduced visibility, why are single pilot operations more difficult during an instrument approach compared to multicrew operations?**
   - A. The pilot has more instruments to manage
   - B. The pilot must continue flying by instruments while trying to acquire a visual reference for the runway
   - C. The aircraft is heavier and requires more coordination
   - D. The single pilot must communicate with ATC while flying

6. The minimum safe altitude (MSA) for the VOR/DME or GPS-A at 7D3 is centered on which position?

A. WHITE CLOUD VOR/DME

B. WHITE HILL VOR/DME

C. BLUE SKY VOR/DME

D. GREEN FIELD VOR/DME

7. What minimum navigation equipment is required to complete the VOR/DME-A procedure?

A. One VOR receiver and one DME receiver

B. Two VOR receivers

C. Only a DME receiver

D. One GPS receiver and DME

8. When executing left turns in the holding pattern, what should you maintain during the transitions?

A. Altitude and speed

B. Flap settings

C. Landing gear position

D. Fuel flow

9. For a holding pattern specified in lieu of a procedure turn, what distance or time limitation must be followed?

A. 30 nautical miles

B. 2-minute circuit

C. 1-minute time limitation

D. 3-minute circuit

10. Where does the STELA.STELA1 arrival begin?

A. CANAN intersection.

B. HERMES intersection.

C. LINDA intersection.

D. FREDY intersection.

Answers

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

Explanations

1. If you receive a RAIM error while on the RNAV(GPS) RWY 30 approach, what should you do?

- **A. Continue to the missed approach point and execute missed approach instructions**
- **B. Abort the approach and circle around**
- **C. Descend to the minimum safe altitude**
- **D. Switch to an alternative navigation system**

In the case of a RAIM error during the RNAV(GPS) RWY 30 approach, the best course of action is to continue to the missed approach point and execute the missed approach instructions. RAIM stands for Receiver Autonomous Integrity Monitoring, which is a system that ensures the integrity of GPS signals used for navigation. If a RAIM error is indicated, it suggests that the integrity of the GPS navigation data may not be reliable. Continuing to the missed approach point means you are still following the procedures outlined for the approach until you reach the point where a decision must be made—whether to continue landing or execute a missed approach. The missed approach instructions are specifically designed to ensure safe navigation away from the runway. This approach respects the integrity of the flight operation, adhering to established protocols even in the face of a potential navigation issue. Choosing to abort the approach and circle around, descend to minimum safe altitude, or switch to an alternative navigation system could introduce additional risks or complicate the situation further, particularly if you are in a low visibility environment or have limited options for navigation at that moment. Therefore, following the missed approach procedures is the safest and most prudent action to take when a RAIM error occurs.

2. Which displacement from the localizer centerline and glide slope indicates you are low and to the left of the ILS course?

- **A. Figure 140**
- **B. Figure 141**
- **C. Figure 142**
- **D. Figure 143**

The indication of being low and to the left of the ILS course is represented in the context of instrument approaches by the position of the aircraft concerning the localizer and glide slope signals. When positioned low, the vertical indication will show that the aircraft is below the glide slope. Simultaneously, being to the left of the localizer centerline is indicated by a lateral deviation to the left. In this scenario, the position depicted in the correct figure illustrates both these conditions: a downward indication showing low altitude relative to the glide slope and a leftward indication in relation to the localizer. This visual representation helps pilots understand their precise navigation status relative to an Instrument Landing System (ILS) approach, allowing them to make timely corrections to ensure they are aligned with the intended approach path. The other figures likely demonstrate different positions, such as being on the glide slope but off to one side, or being high or right of the localizer. These variations serve to teach pilots how to interpret the specific deviations indicated by the instruments and manage their approach to the runway accordingly.

3. What is the maximum indicated airspeed for civil aircraft while holding at 5,000 feet?

A. 180 knots

B. 200 knots

C. 220 knots

D. 240 knots

The maximum indicated airspeed for civil aircraft while holding at 5,000 feet is 200 knots. This is defined in the Federal Aviation Regulations (FAR) and the respective guidance documents that dictate aircraft operations in holding patterns. Holding patterns are designed to maintain safety and efficiency in air traffic management, especially in congested airspace or during conditions where aircraft must be kept in a holding pattern for a period of time, such as when waiting for landing clearance. The specified airspeed limits help ensure that aircraft can maintain proper separation from one another and have sufficient control authority while maneuvering in these established patterns. At lower altitudes, such as 5,000 feet, a 200-knot limit helps to ensure that aircraft can handle their speeds adequately while also considering their performance characteristics, such as climb rates and descent capabilities. This limit provides a standardized airspeed that is manageable for most commercial aviation operations, aligning with operational safety criteria for engaging in holding procedures.

4. If RAIM is not available before a GPS approach, what should the pilot do?

A. Use an alternate navigation system

B. Proceed with the GPS approach anyway

C. Delay the approach until RAIM is restored

D. Switch to VOR navigation

When RAIM (Receiver Autonomous Integrity Monitoring) is not available before a GPS approach, the best course of action is to use an alternate navigation system. RAIM is essential for ensuring the integrity and reliability of GPS signals, particularly during precision approaches. Without it, the pilot cannot be sure that the GPS information is accurate or that the system is functioning correctly. Using an alternate navigation system—such as VOR or NDB—ensures that the pilot can safely navigate to the destination without relying solely on the potentially unreliable GPS data. This approach mitigates risks associated with potential navigation errors or anomalies that could occur if proceeding with the GPS approach without RAIM. The other choices do not ensure safety. Proceeding with the GPS approach without RAIM (the second option) would mean relying on unverified GPS information, which could lead to navigation errors. Delaying the approach until RAIM is restored (the third option) may not be practical in all situations, especially if other navigation means are available. Switching to VOR navigation (the fourth option) is a good practice, but it is more specific than simply using an alternate navigation system, which opens up broader options for the pilot.

5. In reduced visibility, why are single pilot operations more difficult during an instrument approach compared to multicrew operations?

A. The pilot has more instruments to manage

B. The pilot must continue flying by instruments while trying to acquire a visual reference for the runway

C. The aircraft is heavier and requires more coordination

D. The single pilot must communicate with ATC while flying

The correct answer focuses on the challenges a single pilot faces in reduced visibility during an instrument approach, particularly the need to maintain control of the aircraft by instruments while simultaneously attempting to visually identify the runway. In this scenario, the single pilot is responsible for all flight management tasks, including navigation and monitoring instruments. This can be particularly demanding as the pilot must balance their attention between flying the aircraft accurately based on instrument readings and searching for visual cues that indicate the runway's location. This dual-tasking can lead to increased workload and potential distractions, which are particularly taxing for a single pilot compared to a multicrew operation, where responsibilities can be shared. In multicrew operations, tasks such as monitoring instruments, communicating with air traffic control, and managing the overall flight can be distributed among crew members. This greatly alleviates the workload for each individual pilot and allows for more efficient handling of tasks, especially in challenging conditions like reduced visibility.

6. The minimum safe altitude (MSA) for the VOR/DME or GPS-A at 7D3 is centered on which position?

A. WHITE CLOUD VOR/DME

B. WHITE HILL VOR/DME

C. BLUE SKY VOR/DME

D. GREEN FIELD VOR/DME

The minimum safe altitude (MSA) for the VOR/DME or GPS-A approach at an airport is determined based on the location of the VOR or DME that the approach is centered around. In this case, the correct answer indicates that the MSA is centered on the WHITE CLOUD VOR/DME. When conducting instrument approaches, MSAs are often established to ensure that aircraft remain at a safe altitude above terrain and obstacles in the vicinity of the approach navigation aid. The MSA provides a buffer that increases safety margins while navigating through potentially challenging environments, especially in areas where terrain varies significantly. In practice, pilots interpret the MSA on approach charts to identify safe altitudes that are applicable to certain navigation aids. In this scenario, the WHITE CLOUD VOR/DME serves as the reference point, and thus the MSA is established accordingly. Understanding the MSA's dependence on the location of the VOR/DME helps pilots in maintaining awareness of their altitude relative to the terrain as they approach the airport. This reinforces the importance of being familiar with the specifics of approach charts and the related VOR/DME data to ensure safe navigation during instrument approaches.

7. What minimum navigation equipment is required to complete the VOR/DME-A procedure?

A. One VOR receiver and one DME receiver

B. Two VOR receivers

C. Only a DME receiver

D. One GPS receiver and DME

To complete the VOR/DME-A procedure, the minimum navigation equipment required consists of one VOR receiver and one DME receiver. The VOR receiver is essential for receiving VHF omnidirectional range signals, which provide precise directional guidance to pilots navigating in the vicinity of a VOR station. The DME (Distance Measuring Equipment) receiver is critical for determining the aircraft's distance from the DME station, enabling pilots to calculate their position accurately along the approach path. This combination of receivers allows for safe and effective navigation to the procedure’s waypoint, ensuring that pilots can follow the prescribed approach accurately while maintaining the necessary situational awareness. Each component plays a pivotal role in mastering the approach, making both the VOR and DME receivers indispensable. Other options may suggest alternative navigation setups but do not fulfill the specific requirements dictated by the VOR/DME-A procedure. Therefore, having both a VOR and a DME receiver is crucial for executing this approach correctly.

8. When executing left turns in the holding pattern, what should you maintain during the transitions?

A. Altitude and speed

B. Flap settings

C. Landing gear position

D. Fuel flow

Maintaining altitude and speed during the transitions when executing left turns in a holding pattern is critical for ensuring the safety and effectiveness of the maneuver. In a holding pattern, the aircraft must stabilize itself through both vertical and horizontal dimensions. Keeping altitude constant is vital to avoid any unnecessary climbing or descending, which could lead to conflicts with other air traffic or lead to loss of control. Equally important is maintaining a stable speed throughout the turn. Variations in speed can result in excessive bank angles, increased load factors, or excessive turning forces, all of which can complicate the handling of the aircraft. While flap settings, landing gear position, and fuel flow are factors to manage during flight, they are not directly related to the specific requirements of making smooth and safe transitions during holding pattern turns. Flaps are generally set for landing configurations when approaching an airport, and landing gear is only relevant during landing phases. Fuel flow might be adjusted for efficiency or performance but does not impact the immediate handling and stability necessary during holding patterns. Thus, emphasis on altitude and speed assures safe navigation and control during these critical transitions.

9. For a holding pattern specified in lieu of a procedure turn, what distance or time limitation must be followed?

- **A. 30 nautical miles**
- **B. 2-minute circuit**
- **C. 1-minute time limitation**
- **D. 3-minute circuit**

When a holding pattern is established in lieu of a procedure turn, it is essential to adhere to specific limitations to ensure safe and standardized operations during the approach. The correct answer involves a 1-minute time limitation for the circuit that is flown in the holding pattern. This standard timing is applicable under normal conditions, particularly when the aircraft is operating at holding altitudes and speeds defined by the FAA standards. The reason why this 1-minute limitation is crucial is that it promotes consistent spacing between aircraft while in a holding pattern and aids in maintaining predictable and manageable flight paths. By designating a standard 1-minute duration for each leg of the hold, air traffic control can effectively sequence arrivals and departures, ensuring that each aircraft enters the approach phase of the flight safely and without undue delay. The other choices pertain to different parameters that may apply in other scenarios or operational contexts, such as time and distance measures that could be used for various procedures outside of this specific holding pattern situation. They do not align with the established guidelines for a holding pattern specified in lieu of a procedure turn. Understanding the proper time limitations when executing a holding pattern is fundamental for pilots to maintain effective communication and coordination with air traffic control and improve overall traffic management.

10. Where does the STELA.STELA1 arrival begin?

- **A. CANAN intersection.**
- **B. HERMES intersection.**
- **C. LINDA intersection.**
- **D. FREDY intersection.**

The STELA.STELA1 arrival begins at the CANAN intersection. This is significant because it serves as a waypoint where aircraft join the STELA 1 Standard Terminal Arrival Route (STAR) as they approach their destination. The STARs are designed to provide efficient routing, reducing complexity and enhancing safety as aircraft transition from enroute to terminal phases of flight. Approaching from the CANAN intersection allows for organized descent and integration with other arriving aircraft, ensuring that traffic flows smoothly into the terminal area. It's critical for pilots and air traffic controllers to understand these waypoints and sequences to maintain separation and manage the arrival process effectively. Understanding the specific starting point for arrivals like the STELA.STELA1 helps pilots to prepare for initial descent procedures and maintain situational awareness in busy airspace.