Republic Airlines ERJ 170/175 Limitations Practice Test (Sample)

Study Guide

Everything you need from our exam experts!

Questions

1. At what altitude should the aircraft be in the final landing configuration during a stabilized approach?

A. 500 feet above TDZE

B. 1000 feet above TDZE

C. 1500 feet above TDZE

D. 2000 feet above TDZE

2. What is the maximum crosswind limit for RCC 2 (Medium to Poor) conditions?

A. 12 knots

B. 10 knots

C. 8 knots

D. 5 knots

3. What is the maximum ambient temperature for takeoff and landing?

A. +40°C

B. +45°C

C. +50°C

D. +55°C

4. At what maximum speed can the autopilot be engaged in the ERJ 170/175?

A. 240 KIAS

B. 250 KIAS

C. 260 KIAS

D. 270 KIAS

5. What is the maximum speed with flaps extended (VFE) for the ERJ 175?

A. 180 KIAS

B. 200 KIAS

C. 220 KIAS

D. 250 KIAS

6. What temperature must the MCDU DATASET MENU be set to ALL?

A. When SAT is above 10°C

B. When SAT is 10°C or below

C. When landing speeds are below max

D. When operating above 1700 AFE

7. What is the maximum speed during descent for the ERJ 170/175?

A. 300 KIAS

B. 320 KIAS

C. 250 KIAS

D. 280 KIAS

8. What is the maximum allowable difference between Captain and First Officer altimeters?

A. 100 feet

B. 150 feet

C. 200 feet

D. 250 feet

9. At what altitude does the ERJ 170/175 maximum operating ceiling occur?

A. FL350 (35,000 feet)

B. FL410 (41,000 feet)

C. FL300 (30,000 feet)

D. FL450 (45,000 feet)

10. What is the limit for maximum allowable noise level for the ERJ 170/175?

A. 75 dB (A)

B. 80 dB (A)

C. 85 dB (A)

D. 90 dB (A)

Answers

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

Explanations

1. At what altitude should the aircraft be in the final landing configuration during a stabilized approach?

A. 500 feet above TDZE

B. 1000 feet above TDZE

C. 1500 feet above TDZE

D. 2000 feet above TDZE

During a stabilized approach, best practices dictate that the aircraft should be in the final landing configuration at 1000 feet above the touchdown zone elevation (TDZE). This is essential for several reasons. Firstly, being configured and stabilized at this altitude allows the pilots sufficient time to assess the approach and make any necessary adjustments before reaching the runway. It provides a safety buffer, ensuring that the aircraft is on the correct glide path and allows for corrections without entering a critical low altitude where recovery may be more difficult. Secondly, the aircraft's configuration at this point helps to optimize performance. This includes ensuring that the flaps are set correctly for landing, and the engines are properly configured for descent. The combination of a stabilized aircraft along with appropriate configuration at this altitude facilitates a smoother landing process and enhances the overall safety of the approach. Considering the other altitudes presented, being at 500 feet may not provide enough time for the necessary checks or corrections, while 1500 or 2000 feet may be unnecessarily high for final configuration, potentially leading to a less effective management of the approach profile. Thus, 1000 feet is the ideal altitude for final configuration, aligning with standard operating procedures and industry best practices.

2. What is the maximum crosswind limit for RCC 2 (Medium to Poor) conditions?

A. 12 knots

B. 10 knots

C. 8 knots

D. 5 knots

The maximum crosswind limit for RCC 2 (which indicates Medium to Poor runway conditions) is 12 knots. This limit is established to ensure safe operations on runways that might have reduced friction due to factors such as water, mud, or light snow. Operating within this crosswind limit is vital for maintaining control during takeoff and landing, as reduced grip on the runway surface can lead to challenges in handling the aircraft, increased stopping distance, or even loss of directional control. RCC 2 conditions imply that pilots must exercise caution and consider that the runway surface may not provide optimal traction. The specified maximum of 12 knots balances safety with operational capability, allowing pilots to operate the aircraft under these less-than-ideal conditions while minimizing the risk of accidents due to excessive crosswinds.

3. What is the maximum ambient temperature for takeoff and landing?

A. +40°C

B. +45°C

C. +50°C

D. +55°C

The maximum ambient temperature for takeoff and landing for the ERJ 170/175 is indeed +50°C. This limitation is crucial because it defines the operational envelope of the aircraft concerning ambient temperature, ensuring that performance parameters remain within safe and effective limits. Operating at temperatures above this threshold can affect engine performance, climb rates, and overall safety margins, as higher temperatures reduce air density and engine efficiency. The established limitation of +50°C helps to mitigate risks associated with engine operation and aerodynamic performance during critical phases of flight such as takeoff and landing, where performance is vital for safety. Keeping within this temperature limit allows for optimal engine operation and aircraft handling characteristics.

4. At what maximum speed can the autopilot be engaged in the ERJ 170/175?

A. 240 KIAS

B. 250 KIAS

C. 260 KIAS

D. 270 KIAS

The maximum speed at which the autopilot can be engaged in the ERJ 170/175 is 250 KIAS. This limitation is crucial because engaging the autopilot beyond this speed could lead to adverse aerodynamic conditions or control challenges that may compromise flight safety. The autopilot system is designed to operate within specific parameters, and exceeding these thresholds may result in suboptimal performance or failure of the autopilot to function correctly. By adhering to this limitation, pilots ensure that the autopilot system is used safely and effectively, maintaining stable flight operations.

5. What is the maximum speed with flaps extended (VFE) for the ERJ 175?

A. 180 KIAS

B. 200 KIAS

C. 220 KIAS

D. 250 KIAS

The maximum speed with flaps extended, known as VFE, for the ERJ 175 is 200 KIAS. VFE is a critical speed limitation that pilots must adhere to when the flaps are extended to ensure the aircraft remains within safe operating parameters. Exceeding this speed with flaps deployed can lead to increased aerodynamic loads and potential control difficulties, as the aircraft is not designed to handle such speeds in this configuration. This limit ensures that the aircraft maintains its performance characteristics and handling qualities when flaps are used, particularly during approach and landing phases of flight where flaps are typically deployed. Understanding VFE is essential for safe operation, especially in scenarios that involve low speed and high lift, which are common in landing approaches.

6. What temperature must the MCDU DATASET MENU be set to ALL?

A. When SAT is above 10°C

B. When SAT is 10°C or below

C. When landing speeds are below max

D. When operating above 1700 AFE

The correct choice indicates that the MCDU DATASET MENU must be set to ALL when the Static Air Temperature (SAT) is 10°C or below. This procedure is essential for ensuring accurate performance calculations, particularly in colder conditions, where aircraft performance can be affected by the temperature. When the SAT is at or below 10°C, the aircraft experiences denser air, which can influence lift, drag, engine performance, and takeoff and landing distances. Setting the MCDU DATASET MENU to ALL allows the systems to utilize all available data for making precise calculations, which is vital for safe and efficient flight operations under these specific temperature conditions. In warmer temperatures, where SAT is above 10°C, the performance parameters account for different environmental influences, and not necessarily all data needs to be included in the calculations. This distinction aims to streamline the performance data used, allowing pilots to focus on the most relevant information based on current conditions.

7. What is the maximum speed during descent for the ERJ 170/175?

A. 300 KIAS

B. 320 KIAS

C. 250 KIAS

D. 280 KIAS

The maximum speed during descent for the ERJ 170/175 is 250 KIAS. This limitation is in place primarily for safety and operational efficiency. Maintaining a maximum speed of 250 knots during descent helps ensure that the aircraft remains within controlled flight parameters, particularly when transitioning through lower altitude environments where there may be increased air traffic and varying weather conditions. Flying at this speed allows for better handling characteristics, reducing the risk of exceeding structural limits and enhancing the capability to manage the approach and landing phases effectively. This is also part of standard operating procedures to ensure compliant operations within controlled airspace, where speed restrictions are often imposed to manage the flow of traffic. In contrast, the other options represent speeds that either exceed this limit for descent or do not apply to the specific operational envelope of the ERJ 170/175 during descent phases.

8. What is the maximum allowable difference between Captain and First Officer altimeters?

A. 100 feet

B. 150 feet

C. 200 feet

D. 250 feet

The maximum allowable difference between the Captain and First Officer altimeters is 200 feet. This limitation is in place to ensure the accuracy of altitude readings, which are crucial for safe aircraft operation, especially during critical phases like takeoff and landing. When flying, it is vital that both pilots have consistent and reliable altitude information, as discrepancies could lead to misunderstandings in altitude management and could potentially result in controlled flight into terrain or other hazardous situations. The specified limit of 200 feet allows for a reasonable margin of error while still maintaining safety protocols. If the difference exceeds this limit, it typically requires corrective action, such as recalibrating the altimeters or investigating the source of the discrepancy. Understanding this limit is essential for pilots to adhere to proper operational standards and to ensure effective communication and coordination in the cockpit.

9. At what altitude does the ERJ 170/175 maximum operating ceiling occur?

A. FL350 (35,000 feet)

B. FL410 (41,000 feet)

C. FL300 (30,000 feet)

D. FL450 (45,000 feet)

The maximum operating ceiling for the ERJ 170/175 is indeed at FL410, or 41,000 feet. This specification is critical for flight planning as it defines the highest altitude at which the aircraft can operate safely. Operating at such altitudes allows for more efficient cruising, reduced air traffic, and improved fuel efficiency. The aircraft's performance characteristics, systems, and engine capabilities are engineered to support operations at this ceiling, ensuring that pilots can maintain control and performance in the thinner atmosphere found at higher altitudes. Understanding the maximum operating ceiling is essential for pilots to adhere to operational limitations, ensuring compliance with regulatory requirements and enhancing safety during flight operations.

10. What is the limit for maximum allowable noise level for the ERJ 170/175?

A. 75 dB (A)

B. 80 dB (A)

C. 85 dB (A)

D. 90 dB (A)

The maximum allowable noise level for the ERJ 170/175 is set at 85 dB (A). This threshold is critical for ensuring compliance with international noise regulations, which aim to minimize the impact of aircraft operations on communities surrounding airports. Adhering to this limit helps maintain the balance between aviation activities and environmental considerations. Aircraft noise levels are measured in decibels (dB), which represents a logarithmic scale of intensity. The 'A' weighting denotes that the measurement accounts for the way the human ear perceives different frequencies of sound, making it particularly relevant for assessing environmental noise impact. The ERJ 170/175 complies with these standards, which are often dictated by agencies such as the FAA and ICAO, to promote quieter operations and improve community relations near airfields. It is important to understand that the other options exceed the established noise level limits. For instance, levels above 85 dB (A) would not only breach regulatory requirements but also potentially lead to increased restrictions on operations at certain airports or during specific times, adversely affecting scheduling and operational flexibility.