AIRCRAFT LANDING GEAR SYSTEMS PRACTICE TEST (SAMPLE)

STUDY GUIDE

SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 – 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

Questions

1. Skydrol is a common example of which type of hydraulic fluid?

A. Phosphate-ester-base synthetic

B. Mineral-base

C. Water-based

D. Silicone-based

2. Before working on landing gear, which procedure isolates energy sources and prevents unexpected re-energization?

A. De-energize hydraulics

B. Follow lockout/tagout procedures

C. Chock wheels

D. Wear PPE

3. How is hydraulic pressure managed across multiple actuators to ensure reliable gear operation?

A. A single hydraulic circuit with no crossfeed.

B. Redundant hydraulic systems with crossfeed and properly designed valve logic ensure pressure can be applied to all actuators if one path fails.

C. Pneumatic power supplies the actuators.

D. Manual hand pumps are required for each actuator.

4. Which of the following is NOT listed as a method emergency gear extension systems may use?

A. Mechanical

B. Alternate hydraulic

C. Compressed air

D. Electric motor

5. What term describes the condition when the front sides of the wheels are closer together than the rear sides?

A. Aligned

B. Toed-out

C. Toed-in

D. Centered

6. What is the role of a gear door interlock?

A. It ensures gear movement does not occur unless doors are properly positioned, preventing interference and damage.

B. It prevents gear movement if the landing gear doors are not fully closed after extension.

C. It disables gear movement when the aircraft is not in the proper attitude.

D. It is a mechanism that temporarily locks the gear in the event of hydraulic failure.

7. The most popular low-pressure tire found on piston-powered aircraft today is the Type _____ tire.

A. Type 2 tire

B. Type 3 tire

C. Type 4 tire

D. Type 6 tire

8. All landing gear bolts must have the _____ to prevent wear and damage.

A. Proper torque

B. Loose torque

C. Excess torque

D. No torque

9. An oleo strut absorbs the taxi shocks with which medium?

A. Oil

B. Water

C. Air

D. Gas

10. Define the term 'downlock' in landing gear systems.

A. A mechanical latch that secures the gear in the fully extended and locked position to prevent retraction.

B. An electrical sensor that monitors wheel speed.

C. A hydraulic valve controlling door movement.

D. A device that senses wing flaps position.

Answers

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

Explanations

1. Skydrol is a common example of which type of hydraulic fluid?

A. Phosphate-ester-base synthetic

B. Mineral-base

C. Water-based

D. Silicone-based

Skydrol is a phosphate-ester-based synthetic hydraulic fluid. This type is chosen for aviation because it provides high fire resistance, a high flash point, and excellent stability across a wide temperature range, which is crucial in aircraft hydraulic systems where leaks near hot components could ignite if flammable fluids were used. Its synthetic phosphate-ester composition also offers good dielectric properties, helping to isolate electrical components in the system. Mineral-base, water-based, and silicone-based fluids do not offer the same combination of fire resistance and high-temperature stability needed for aircraft applications, making the phosphate-ester synthetic category the correct match for Skydrol.

2. Before working on landing gear, which procedure isolates energy sources and prevents unexpected re-energization?

A. De-energize hydraulics

B. Follow lockout/tagout procedures

C. Chock wheels

D. Wear PPE

Lockout/tagout procedures create a true zero-energy state before maintenance by identifying every energy source feeding the landing gear, isolating them, applying locks to prevent re-energization, and tagging the equipment to warn others. In landing gear work, energy can come from hydraulics, electricity, pneumatics, and stored mechanical energy. Simply shutting down one part, like hydraulics, doesn't guarantee no energy will re-energize the system or that all sources are safely isolated. Lockout/tagout ensures all sources are blocked and clearly communicates that work is in progress, with verification that energy has been dissipated before maintenance begins. De-energizing hydraulics alone is not enough because other sources may be present or residual energy still stored. Chocking wheels prevents movement but doesn't address energy isolation. PPE is about personal protection, not stopping energy.

3. How is hydraulic pressure managed across multiple actuators to ensure reliable gear operation?

A. A single hydraulic circuit with no crossfeed.

B. Redundant hydraulic systems with crossfeed and properly designed valve logic ensure pressure can be applied to all actuators if one path fails.

C. Pneumatic power supplies the actuators.

D. Manual hand pumps are required for each actuator.

Reliability comes from redundancy and careful pressure distribution so every actuator can be fed even if one path has an issue. In multi-actuator gear systems, two or more hydraulic circuits are provided with crossfeed lines and smart valve logic. The crossfeed allows pressure to be shared between circuits, so if one line or path leaks or a valve traps pressure, the other circuit can still supply the remaining actuators. Valve logic—sequencing, check valves, isolation valves, and pressure regulators—controls which actuators are pressurized, prevents backflow, and ensures the gear extends, retracts, and locks in the proper order with the right hold pressure. This setup also enables quick shutdowns and safe hold scenarios, while components like accumulators smooth pressure spikes and maintain hold during transient demands. The other options fall short because a single isolated circuit is vulnerable to a single failure, pneumatic power lacks the necessary force and control for gear operations, and manual hand pumps aren't practical for synchronized, reliable actuation.

4. Which of the following is NOT listed as a method emergency gear extension systems may use?

A. Mechanical

B. Alternate hydraulic

C. Compressed air

D. Electric motor

Emergency gear extension systems are designed to move the gear out and lock it even when the primary hydraulic system isn't available. The typical back-up methods are mechanical/manual extension, alternate hydraulic extension using a separate hydraulic supply, and a pneumatic (compressed air) extension that uses stored air to drive the gear actuators. An electric motor, while it can power actuators in some designs, isn't usually listed as a separate emergency extension method in standard references. Electrical power may not be available during a failure, and design conventions treat electric-drive as part of a broader system rather than a standalone emergency extension method.

5. What term describes the condition when the front sides of the wheels are closer together than the rear sides?

A. Aligned

B. Toed-out

C. Toed-in

D. Centered

Toe-in describes the condition where the front edges of the wheels are closer together than the rear edges, so the wheels are angled inward when viewed from above. This inward angle helps with straight-line tracking and stability on the ground, providing a self-centering tendency as the tires roll. It's a deliberate alignment setting that can compensate for suspension sag or load and can influence tire wear and steering feel. The opposite, toe-out, would have the front edges farther apart. If the wheels were perfectly parallel with no toe, that would be a neutral or aligned condition, not toe-in.

6. What is the role of a gear door interlock?

A. It ensures gear movement does not occur unless doors are properly positioned, preventing interference and damage.

B. It prevents gear movement if the landing gear doors are not fully closed after extension.

C. It disables gear movement when the aircraft is not in the proper attitude.

D. It is a mechanism that temporarily locks the gear in the event of hydraulic failure.

A gear door interlock is a safety feature that coordinates the movement of the landing gear with the position of its doors. It prevents the gear from moving unless the corresponding doors are in the correct position and properly latched. This guarantees that there is no interference between the gear and the doors as they operate, protecting both the doors and the gear from damage and ensuring a successful extension or retraction sequence. In practice, if a door isn't fully positioned or secured, the interlock stops gear movement, so you don't end up with binding, misalignment, or damage to the door or gear bay. This broad role covers the essential need for correct door positioning before any gear motion, rather than addressing only specific scenarios like "doors must be closed after extension," an aircraft attitude condition, or hydraulic failure.

7. The most popular low-pressure tire found on piston-powered aircraft today is the Type _____ tire.

A. Type 2 tire

B. Type 3 tire

C. Type 4 tire

D. Type 6 tire

Piston-powered aircraft rely on tires that give a big contact patch to spread the load and cushion landings at relatively low inflation pressures. The Type 3 tire is the standard low-pressure tire used on most of these airplanes today because it is designed to handle the typical loads of light aircraft while staying at the low pressures that provide that large footprint. That larger contact area helps absorb shocks from rough or grass runways and distributes weight more evenly across the tire and gear, protecting the structure during landings. It also offers a good balance of durability and cost for everyday operation, which is why it's the most common choice in general aviation. Other tire types exist for specialized needs or heavier configurations, but they don't match this combination of load distribution, cushioning, and practicality for the typical piston-powered aircraft.

8. All landing gear bolts must have the _____ to prevent wear and damage.

A. Proper torque

B. Loose torque

C. Excess torque

D. No torque

Tightening landing gear bolts to the proper torque creates the correct clamp load to keep the joints from moving under vibration and load, which protects against wear and damage. When bolts are under-torqued, the joints can loosen and permit relative motion, leading to fretting, wear, and possible failure of the fasteners or surrounding components. If bolts are torqued too much, the preload can exceed what the bolt and threads can safely handle, causing thread stripping, bolt head or shank damage, or distortion of the joint, which also undermines fatigue life. Not applying any torque at all obviously fails to hold the assembly together under flight loads. Use the manufacturer's specified torque with a calibrated wrench and the correct lubrication or dryness requirements to maintain proper preload and protect the landing gear system.

9. An oleo strut absorbs the taxi shocks with which medium?

A. Oil

B. Water

C. Air

D. Gas

An oleo strut uses a gas-filled chamber as the spring that cushions the impact. When the aircraft taxies or lands, the compressed gas inside the strut compresses to absorb the shock, giving the vertical spring action. The hydraulic oil then acts as a damper, flowing through a restricted passage to control the rate of compression and rebound. So the medium that absorbs the taxi shocks is the gas (air) inside the strut.

10. Define the term 'downlock' in landing gear systems.

A. A mechanical latch that secures the gear in the fully extended and locked position to prevent retraction.

B. An electrical sensor that monitors wheel speed.

C. A hydraulic valve controlling door movement.

D. A device that senses wing flaps position.

Downlock is the mechanical latch that secures the landing gear in the fully extended and locked position, preventing retraction. As the gear lowers and the doors open, a locking mechanism—often a pawl or pin on the gear leg or door frame—engages a receptacle or notch, and spring or gravity helps it stay seated. This lock must withstand the loads of landing, taxiing, and gusts, so the gear remains locked until the retraction sequence is deliberately commanded. When retraction is initiated, hydraulic action releases the lock so the gear can fold into the nacelle or wing. This isn't an electrical sensor, a hydraulic valve for door movement, or a flap-position device, so those functions aren't what the downlock represents.

Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

https://aircraftlandinggearsystems.examzify.com

We wish you the very best on your exam journey. You've got this!