

North Carolina CDL Air Brakes Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

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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. What does the S-cam do in the air brake system?**
 - A. Prevents brake lock-up**
 - B. Forces the brake shoes against the brake drum**
 - C. Maintains brake pressure**
 - D. Controls vehicle traction**
- 2. What safety feature is used in air brake systems to prevent overheating?**
 - A. Heat resistant brake fluid**
 - B. Cooling ducts in the brake lines**
 - C. Spring brakes**
 - D. Electronic monitoring systems**
- 3. At what PSI does the air compressor stop pumping air?**
 - A. 100 PSI**
 - B. 115 PSI**
 - C. 125 PSI**
 - D. 130 PSI**
- 4. What should be done if skidding occurs during emergency braking?**
 - A. Continue braking steadily**
 - B. Release the brake and steer**
 - C. Turn off the engine**
 - D. Press the accelerator**
- 5. What is the consequence of allowing brake shoes to wear beyond the manufacturer's specified thickness?**
 - A. Increased fuel consumption**
 - B. Potential brake failure or reduced braking efficiency**
 - C. Uneven tire wear**
 - D. Decreased engine power**

- 6. What factors can lead to brake fade or failure?**
- A. Overheating and low tire pressure**
 - B. Overheating and low air pressure**
 - C. Excessive weight and powerful engines**
 - D. Low oil and wet conditions**
- 7. What does the service brake do when you press the brake pedal?**
- A. Applies the brake during normal driving**
 - B. Only stops the vehicle when parked**
 - C. Releases the pressure from the air tanks**
 - D. Engages the emergency brakes**
- 8. What is a critical function of dual air systems in large trucks?**
- A. To provide additional acceleration**
 - B. To enhance fuel efficiency**
 - C. To maintain braking function in case one system fails**
 - D. To provide power to auxiliary systems**
- 9. What occurs if the air pressure drops below a certain level during braking?**
- A. The brakes will automatically engage**
 - B. The braking power will increase**
 - C. The vehicle will need to be towed**
 - D. The driver will receive a warning signal**
- 10. Which of these is NOT a proper time to apply the parking brakes?**
- A. If your brakes are very hot.**
 - B. If the vehicle is on a flat surface.**
 - C. When parked for an extended period.**
 - D. If the vehicle is in neutral.**

Answers

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

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Explanations

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1. What does the S-cam do in the air brake system?

- A. Prevents brake lock-up
- B. Forces the brake shoes against the brake drum**
- C. Maintains brake pressure
- D. Controls vehicle traction

The S-cam is a crucial component in the air brake system, specifically within drum brake assemblies. Its primary function is to force the brake shoes against the brake drum when air pressure is applied. When the driver activates the brakes, compressed air enters the brake chamber, which then pushes the diaphragm. This movement rotates the S-cam, causing its arms to spread and push the brake shoes outward against the interior surface of the brake drum. This configuration enables effective braking by increasing the surface area in contact and generating friction, which ultimately slows down or stops the vehicle. The S-cam design is notable because its shape and motion provide a mechanical advantage, allowing for a powerful and efficient braking action. Understanding this process is essential for CDL candidates, as it underscores the importance of the S-cam in ensuring safe and responsive braking performance in commercial vehicles.

2. What safety feature is used in air brake systems to prevent overheating?

- A. Heat resistant brake fluid
- B. Cooling ducts in the brake lines
- C. Spring brakes**
- D. Electronic monitoring systems

The correct answer highlights the role of spring brakes in preventing overheating within air brake systems. Spring brakes are a critical component of air brake systems that provide a failsafe in the event of a loss of air pressure in the system. They operate by utilizing large coil springs that, when compressed by air pressure, are held in place. If the air pressure drops significantly, these springs are designed to apply the brakes automatically. This mechanism is essential because, in the absence of sufficient air pressure, the continued operation of the vehicle can lead to situations where the brakes could overheat, especially in prolonged or heavy braking scenarios. When spring brakes engage, they ensure that the vehicle comes to a stop safely, thus preventing further friction and potential overheating of the brake components. The other options do not effectively address the issue of overheating in the same way. For example, heat resistant brake fluid is not typically a feature associated with air brakes, and while cooling ducts could theoretically aid in thermal management, they are not standard in air brake systems. Electronic monitoring systems may be implemented for various functions but do not directly contribute to preventing overheating in the same manner as spring brakes do.

3. At what PSI does the air compressor stop pumping air?

- A. 100 PSI
- B. 115 PSI
- C. 125 PSI**
- D. 130 PSI

The air compressor in air brake systems is designed to stop pumping air at approximately 125 PSI. This is an important pressure level because it ensures that the air tanks have sufficient air pressure to operate the brakes effectively while preventing over-pressurization, which could lead to damage or malfunction. Once the air pressure reaches this threshold, the governor, a component of the air compressor system, will cut off the air supply to maintain safety and efficiency. Keeping the pressure consistent at around 125 PSI allows the braking system to function optimally, as it ensures that there is enough compressed air ready to engage the brakes when needed.

4. What should be done if skidding occurs during emergency braking?

- A. Continue braking steadily
- B. Release the brake and steer**
- C. Turn off the engine
- D. Press the accelerator

In the event of skidding during emergency braking, the appropriate response is to release the brake and steer. This action helps to regain control of the vehicle. When brakes are locked up during a skid, the wheels stop turning, which can lead to a loss of steering control. By easing off the brake pedal, the wheels can start rotating again, allowing the driver to steer in the direction they wish to go. This technique is critical in avoiding a total loss of control and can help in maneuvering out of the skid situation. Continuing to brake steadily can maintain the skid and worsen the situation, while turning off the engine or pressing the accelerator does not address the immediate need to regain traction and control. These alternative actions could lead to further complications rather than effectively managing the skid.

5. What is the consequence of allowing brake shoes to wear beyond the manufacturer's specified thickness?

- A. Increased fuel consumption
- B. Potential brake failure or reduced braking efficiency**
- C. Uneven tire wear
- D. Decreased engine power

Allowing brake shoes to wear beyond the manufacturer's specified thickness can lead to potential brake failure or reduced braking efficiency. Brake shoes are a crucial component in ensuring that a vehicle can stop effectively and safely. When they wear down too much, they may not provide the necessary friction against the brake drum, leading to longer stopping distances and an increased risk of accidents. Additionally, excessively worn brake shoes could lead to damage to other brake components, creating a situation where the brakes may fail entirely, posing significant safety hazards for the driver and others on the road. Regular maintenance and timely replacement of brake shoes are essential to maintain optimal brake function and vehicle safety.

6. What factors can lead to brake fade or failure?

- A. Overheating and low tire pressure
- B. Overheating and low air pressure**
- C. Excessive weight and powerful engines
- D. Low oil and wet conditions

Brake fade or failure can occur due to several factors, notably overheating and low air pressure, which are critical to the operation of air brake systems. Overheating happens when brakes are used excessively or in challenging conditions, resulting in the brake components, particularly the brake drums or pads, reaching high temperatures that can compromise their effectiveness. When brakes reach a temperature that exceeds their design limits, the friction material can lose its grip, leading to brake fade. Low air pressure in the braking system reduces the force applied by the brake chamber to the braking components. Air brakes rely on a specific air pressure level to function properly; if the pressure drops too low, it can lead to insufficient application of the brakes, resulting in a diminished braking force. This combination of overheating from excessive use and insufficient application pressure can significantly impair braking performance, creating a hazardous situation. Understanding these factors is essential for drivers operating vehicles equipped with air brakes, as they must monitor brake system pressures and be mindful of heating issues to maintain safe operation on the road.

7. What does the service brake do when you press the brake pedal?

- A. Applies the brake during normal driving**
- B. Only stops the vehicle when parked
- C. Releases the pressure from the air tanks
- D. Engages the emergency brakes

The service brake is designed to apply brake pressure during normal driving conditions. When the driver presses the brake pedal, the service brake provides the necessary braking force to slow down or stop the vehicle effectively. This function is crucial for controlling speed and safely navigating on the road. The service brake system typically utilizes air pressure in air-braked vehicles to engage the brakes in a manner that is both responsive and efficient, ensuring the vehicle decelerates as needed when driving. This is in contrast to other brake functions like the parking brake, which is intended for holding the vehicle stationary when parked, or emergency brakes, which are used in critical situations to stop the vehicle when there is a failure in the primary braking system. Understanding the primary purpose of the service brake is essential for safe driving and effective management of vehicle speed in various operational circumstances.

8. What is a critical function of dual air systems in large trucks?

- A. To provide additional acceleration**
- B. To enhance fuel efficiency**
- C. To maintain braking function in case one system fails**
- D. To provide power to auxiliary systems**

The critical function of dual air systems in large trucks is to maintain braking function in case one system fails. Dual air systems consist of two separate air brake circuits, which serve to enhance safety. If one circuit encounters a failure—such as a leak, loss of air pressure, or other malfunction—the other circuit can continue to provide braking power. This redundancy is essential for preventing brake failure, which could result in a loss of control of the vehicle and significantly increase the risk of accidents. In large vehicles, where the weight and momentum can lead to severe consequences if braking fails, having a dual air system is a key safety measure. It ensures that drivers have a reliable means to stop or slow the vehicle even in the event of a malfunction in one of the air brake systems. The other options—providing additional acceleration, enhancing fuel efficiency, or powering auxiliary systems—do not pertain to the primary purpose of air brake systems, which is to ensure effective and safe stopping capabilities.

9. What occurs if the air pressure drops below a certain level during braking?

- A. The brakes will automatically engage**
- B. The braking power will increase**
- C. The vehicle will need to be towed**
- D. The driver will receive a warning signal**

When the air pressure in the brake system drops below a specified level, the system is designed to alert the driver with a warning signal. This warning is critical because it indicates that the air pressure may be insufficient for safe braking operation. In air brake systems, maintaining proper air pressure is essential for the effective functioning of the brakes. If the pressure falls too low, the warning system provides a visual or audible alert, allowing the driver to take immediate action. Ignoring this warning can lead to brake failure and increase the risk of an accident, as the braking power will be compromised. This proactive feature helps to ensure that drivers are aware of potential safety issues before they become critical.

10. Which of these is NOT a proper time to apply the parking brakes?

A. If your brakes are very hot.

B. If the vehicle is on a flat surface.

C. When parked for an extended period.

D. If the vehicle is in neutral.

Applying parking brakes when the brakes are very hot is not advisable due to the risk of damage to the braking system and reduced performance. When brakes are hot, they are more susceptible to wear and warping, and engaging the parking brake can lead to sticking or overheating. In contrast, applying parking brakes on a flat surface is acceptable because it firmly secures the vehicle. It is also appropriate to engage the parking brakes when parked for extended periods, as this helps prevent the vehicle from rolling. Finally, applying parking brakes while the vehicle is in neutral is also proper, as it allows for securing the vehicle without any strain on the braking components.

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://nccdlairbrakes.examzify.com>

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