CDLTEST-ANSWERS.COM

Study Guide and Practice Tests

Commercial Drivers License – Preparation Materials
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Dear future CDL Success Story:
Congratulations on your purchase of the most effective test-taking study guide for the Commercial Driver's License Exams. This is more than a study guide the goal is to share secrets with our customers that will help you receive your CDL license as quickly and efficiently as possible. How well you do on this test will have a significant impact on your future. We have researched information needed to pass CDL tests in all 50 states.

This product is designed and written by authors who actually took the CDL. We have since helped many others pass this test and our guidelines have been proven repeatedly. People who have failed the CDL prior to our help have since retaken the test and passed it immediately. Our goal is to help others who desire to become Professional Drivers. We are willing to share the secrets of passing this test with you.

How to use this guide
We don’t want to waste your time. If you are only interested in passing the tests, then reading the practice tests and a minimum of quickly reviewing the study guide should be enough to pass for most people. However, we suggest studying all the materials provided by us and your local DMV.

Study for your CDL test well in advance. Give yourself up to four weeks of study time. We suggest that you read through the manual completely to get a feel for the content and organization. Read the general knowledge section first, and then proceed to the endorsement test sections. The information in each section has been carefully selected based on its importance for passing the exams.

Read over the practice test questions using the study guide as a reference when needed. After this try the practice test questions without the study guide but do refer to it if you get stuck.

Your success is our success
We would like to hear from you after you have taken your test. Please feel free to email us and tell us how you did. Thank you for your business and we wish you success as you begin your Professional Driving Career.

Sincerely,

CDLTEST-ANSWERS.COM
General Information
Most states will use a multiple choice CDL test format. This means you will be given a question followed by several possible answers. Usually there will be three choices. You are to choose the best answer. Most tests are computerized and will let you know immediately if you miss a question.

Some states will have additional state laws that pertain to their particular state. Check with your state to see if this applies to them. If so, you must obtain a copy of the State Handbook from the nearest DMV office and study this material until you are familiar with it.

Getting Your CDL
When you apply for your CDL, you must show proof of your identity, social security number and residency. You must provide your most recent medical examiner's certificate (Health Card).

If you already have a driver's license, you can use it as proof of your identity, social security number and residency.

If you must meet the federal or State Motor Carrier Safety Regulations, you must provide your most recent medical examiner's certificate. Medical forms are available at any DMV office. All drivers must certify that they are in compliance with the federal or State motor carrier safety regulations or that they do not have to comply with them. Refer to the Code of Federal Regulations for an explanation of these safety requirements.

Vision Standards
To operate commercial motor vehicles, you must have:
20/40 or better vision in each eye, and
140 degrees or better horizontal vision.
These visual requirements must be met without the aid of a telescopic lens. Some drivers may be granted waivers from these vision requirements. For information concerning waivers for travel intra-state, contact your local DMV.

What Is a Commercial Motor Vehicle?
• a single vehicle with a gross vehicle weight rating (GVWR) of 26,001 pounds or more
• a combination of vehicles with a gross combination weight rating of 26,001 pounds or more if the vehicle(s) being towed has a GVWR of more than 10,000 pounds
• vehicles that carry 16 or more passengers, including the driver
• any size vehicle that transports hazardous materials and that requires federal placarding

Who Are Commercial Drivers?
Commercial driver's license requirements don't apply to:
• operators of emergency vehicles, such as firefighters
• active duty military personnel operating military vehicles
• operators of farm vehicles when used to move farm goods, supplies or machinery to or from their farm
• not used as a common or contract motor carrier, and used within 150 miles of the farm
• vehicles operated by persons only for personal use, such as recreational vehicles and rental moving vans.

**It's illegal for commercial drivers to have more than one license. You must keep the license issued by the state where you live. All other licenses must be returned to the states that issued them. If you fail to return licenses from other states, you could be fined up to $5,000, put in jail for up to 90 days, or both.**

**CDL Age Requirements**
You must be at least 18 years of age to hold a CDL. Under federal law, you must be a commercial driver at least 21 years of age to drive across state lines, transport hazardous materials or transport interstate freight (e.g. mail) within the state.

**CDL Instruction Permit**
If you want to learn to drive commercial motor vehicles, you must get a commercial driver’s license instruction permit.

To obtain a CDL instruction permit, you must pass the CDL general knowledge exam and the other endorsement exams depending on the type of vehicles that you want to drive.

For example, if you want to learn to operate a class A tank vehicle, you must take the general knowledge exam, the tank vehicle endorsement exam.

If you want to learn to drive a school bus, you must take the general knowledge exam, school bus and/or passenger vehicle endorsement exams.

The CDL instruction permit allows you to drive a commercial vehicle of the class and type shown on the permit only when a person licensed to drive the same type of vehicle is with you. This permit will be valid for up to six months. Once you complete the pre-trip, driving and post-trip skills tests successfully, you will be given an actual CDL license.

**CDL Classifications**
You need to get your CDL for the class vehicle you plan to drive plus you may need additional endorsements.

**Class A**
Any combination of vehicles with a gross combination weight rating of 26,001 pounds or more if the vehicle(s) being towed have a GVWR of more than 10,000 pounds. Vehicles in this class include:
• tractor-trailer
• truck and trailer combinations
• tractor-trailer buses
If you hold a class A license and you have the correct endorsements, you may also operate vehicles listed in classes B and C.
Class B
Any single vehicle with a GVWR of 26,001 pounds or more. Any single vehicle with a GVWR of 26,001 pounds or more towing another vehicle with a GVWR of 10,000 pounds or less.
This class includes:
• straight trucks
• large buses
• segmented buses
• trucks towing vehicles with a GVWR of 10,000 pounds or less
If you hold a class B license and you have the correct endorsements, you may also operate vehicles listed in class C.

Class C
Any vehicle that is not included in classes A or B that carries hazardous materials or is designed to carry 16 or more passengers, including the driver.

CDL Endorsements
H Permits you to drive a vehicle that transports hazardous materials.
N Permits you to drive a tank vehicle.
P Permits you to drive a passenger-carrying vehicle.
S Permits you to drive a school bus.
T Permits you to drive a double or triple trailer.

CDL Restrictions
J You may only operate a school/activity bus. You may not operate any other type of commercial motor vehicle. This restriction applies only if you do not pay your CDL fees.
K You may not operate a vehicle with air brakes. If you plan to operate a vehicle with air brakes, you must take the air brakes knowledge exam. You must also take the road test in a vehicle equipped with air brakes.
Y You must wear corrective lenses when operating a commercial motor vehicle.

CDL Test Tip
The general knowledge exam determines your knowledge of safe driving techniques for commercial vehicles, air brakes and transporting cargo. Test questions are taken from the information in this manual. To pass the exam, review the general knowledge section of the study guide and take the general knowledge practice exams.

You must answer at least 80% of the general knowledge questions correctly to pass. After completing the general knowledge exam, there are other endorsement exams required depending on which type of CDL you need:

- Air Brakes
- Combination Vehicles
- Transporting Passengers
- Doubles and Triples
- Tank Vehicles
- Hazardous Materials
To prepare for the CDL endorsement exams, study all the information in each endorsement section. You only need an endorsement if it is required for the type of vehicle you will be driving. For example to drive a tractor trailer with a combined gross motor vehicle weight above 26,000 pounds, a Class A license is needed. It requires that you pass the General Knowledge exam plus Air Brakes and Combination Vehicles endorsement exams.

A straight truck with no air brakes would be an example of a Class B license. All you need to do is pass the General Knowledge exam.

Once you pass the required general knowledge exam and endorsement exams (if needed), you can then take the CDL skills exams.

These exams include three areas:
- pre-trip inspection
- basic vehicle control
- on-road driving

Important: You must take the skills exams in the type of vehicle for which you want to be licensed.

We outline what is needed to pass the pre-trip exam in the next section. Then we move on to the General Knowledge exam and Endorsement exams.

For basic vehicle control you will be required to prove driving and backing skills in the type of vehicle you are licensing for. You will need to parallel park, back up to a simulated loading dock, back between cones in an S pattern, etc.

Disqualifications
If you are convicted of any of the following violations when driving a commercial motor vehicle, you will be disqualified or prohibited from driving commercial motor vehicles.

You will receive a one-year disqualification for the following offenses:
- Driving a commercial motor vehicle with a blood alcohol content (BAC) of 0.04 or higher.
- Driving a commercial motor vehicle while under the influence of alcohol or drugs
- Refusing a blood and/or breath test while operating a commercial motor vehicle
- Failing to stop at the scene of a crash that involves your commercial motor vehicle if the crash causes injury or death.
- Using a commercial motor vehicle to commit a felony.
- Making a false statement on any application for a commercial driver's license.

✓ You will receive a three-year disqualification if you were convicted of one of the offenses listed above while transporting hazardous materials.

You will receive a life-time disqualification if you:
- receive a second conviction for one of the violations listed above; or,
- if you are convicted of using a commercial motor vehicle in the manufacture or illegal distribution of drugs.
• You will receive a 60-day disqualification if you are convicted of two serious violations within a three-year period.

• You will receive a 120-day disqualification if you are convicted of three or more serious violations within a three-year period.

• You will receive a 180-day disqualification for your first conviction of violating an out-of-service order.

• You will receive a three-year disqualification for the second and following convictions of violating out-of-service orders.

• You may not operate commercial motor vehicles if you are convicted of driving under the influence even if you are issued a restricted license that allows you to drive during the suspension period. **This applies even if the violation occurred in your personal car.**

**Serious Violations**
Serious Violations include the following:
• Speeding 15 mph or more above the speed limit
• Reckless driving
• Improper or erratic lane change
• Following too closely
• A moving violation related to a fatal crash
• All CDL drivers are subject to your state’s controlled substance and alcohol testing laws. If you operate a commercial vehicle under the influence of alcohol or drugs, refuse to take a blood alcohol test or are found to have a BAC of .04 or greater, your CDL will be disqualified. The disqualification period ranges from 60 days to life, but does not necessarily affect your privilege to drive a passenger vehicle.

**Vehicle Inspection**
Safety is the most important reason to inspect your vehicle. Inspecting your vehicle for defects can prevent breakdowns and crashes.

Federal and state laws require drivers to inspect their vehicles before every trip. Federal and state inspectors can inspect your vehicle. If they find that it is unsafe, they can put it out of service until you have it fixed. If you are convicted of violating an out of service order, your CDL may be suspended or revoked.

**Types of Inspections**
There are three kinds of inspections:
• pre-trip
• during the trip
• after the trip

**Pre-trip Inspection**
A pre-trip inspection helps you find problems that could cause a breakdown or crash.
**During the Trip**
Watch your gauges for signs of trouble. Use your senses to check for problems. Look, listen, smell, and feel. Check critical parts when you stop:
- Tires, wheels and rims
- Brakes
- Lights and reflectors
- Brake and electrical connections to the trailer
- Trailer coupling devices
- Cargo covers and tie downs

It's a good idea to inspect your vehicle within the first 25 miles of the trip and also every 150 miles or every 3 hours (whichever comes first).

**After-trip Inspection and Report**
Inspect your vehicle at the end of the trip, day, or tour of duty. If you find any problems, report them to your employer. Additionally, whether or not you find problems, you must complete a written report and sign it.

**What to Look for During the Inspection**

**Tires**
- Check for proper tire pressure using an air pressure gauge or mallet.
- It is illegal to use regrooved, recapped or retreaded tires on the front wheels of a bus.

Look for the following problems with tires / wheels:
- Mismatched tire sizes
- Radial and bias-ply tires used together
- At least 4/32" of tread depth in major grooves on front tires
- At least 2/32" of tread depth in major grooves on other tires
- Cuts or other damage
- Dual tires touching Wheels and rims
- Damage rims or wheels
- Rust around wheel nuts; loose nuts
- Missing clamps, spacers, studs or lugs
- Mismatched, bent or cracked lock rings
- Wheel or rims that have been welded

**Brakes**
Look for brake drum and shoe problems on front, rear and trailer brakes:
- Cracked drums
- Shoes or pads with oil, grease or brake fluid on them
- Shoes worn thin, missing or broken
- Cracked, worn or frayed air hoses
- Cracks or dents in the air chamber
- Broken or loose slack adjusters

**Steering system**
Look for steering system defects:
- Missing nuts, bolts, cotter keys or other parts on the steering box
• Bent, loose or broken parts of the steering linkage
• Power steering hoses, pumps and fluid level
• Power steering fluid leaks
• Steering wheel play of more than 10 degrees (approximately 2 inches of movement at the rim of a 20-inch steering wheel)
• If your vehicle has a steering axle brake, be sure that it is never disabled

Suspension system
The suspension system holds up the vehicle and its load. It keeps the axles in place. Therefore, broken suspension parts are very dangerous. Look for front, rear and trailer suspension defects:
• Spring hangers that allow movement of an axle from the proper position
• Cracked or broken spring hangers
• Missing or broken leaves in any leaf spring. If one fourth or more are missing, your vehicle could be put out of service. But, any defect is dangerous.
• Broken leaves in the multi-leaf spring
• Leaves that have shifted and could hit a tire or other part.
• Leaking shock absorbers
• Torque rod or arm, u-bolts, spring hangers or other axle positioning parts that are cracked damaged or missing
• Air suspension systems that are damaged and or leaking
• Any loose, cracked, broken or missing frame members

Exhaust system Check for
• Leaking parts
• Leaks which could allow carbon monoxide to leak into your cab
• Parts rubbing against the fuel system, tires or other moving parts
• Loose, broken or missing parts
• Check muffler, muffler stack and pipe

Emergency equipment
Your vehicle must be equipped with the following emergency equipment:
• Properly charged fire extinguisher
• Spare electrical fuses
• Three reflective triangles
• Seat Belt

Optional items may include:
• Tire Chains
• Tire changing equipment
• List of emergency phone numbers
• Accident reporting kit

Cargo
• Make sure your truck is not overloaded. Be sure that the cargo is balanced and secured before each trip.
• If you are carrying hazardous materials, be sure you have the proper papers and placarding.
Performing a Vehicle Inspection – Pre-trip skills test

Before you inspect the vehicle, make sure that the parking brakes are on and the wheels are chocked. If you have to tilt the cab, secure loose items so they won’t fall. It is important to follow a sequential system – meaning have a start, middle and end – do not bounce around – this will help you to not forget things during the pre-trip portion of the skills test.

Remember, 60% or more of the pre-trip skills test will be wheels / tires, suspension system and brake system for each axle. You only need 80% to pass so make sure you know these systems very well.

Start at the front and work your way around the vehicle.

Point to each major part or system, name it and discuss problems to look out for.

1. Front of vehicle - Headlights, turn signals and four-way flashers
   - Good condition – no cracks
   - No missing lenses
   - Signals working

2. Check the engine compartment
   - Engine oil level
   - Coolant level in radiator, condition of hoses
   - Power steering fluid level; hose condition
   - Windshield washer fluid level
   - Battery fluid level, connections and tie downs
   - Automatic transmission fluid level (you may have to start the engine)
   - Check belts for tightness and wear (alternator, water pump, air compressor)
   - Leaks in the engine compartment--fuel, coolant, oil, power steering fluid, hydraulic fluid, battery fluid
   - Steering system (Steering Gear Box, Pitman Arm, Steering Knuckles, etc.)

3. Start the engine and inspect inside the cab
   - Check all gauges
   - Oil pressure should come up to normal within seconds after the engine is started
   - Ammeter and/or voltmeter
   - Coolant temperature
   - Engine oil temperature
   - Air Pressure Gauges for Emergency and Service brake systems
   - Warning lights and buzzers should go out right away
   - Check the mirrors and windshield
   - Steering wheel should not have more than 2 inches of play
   - Clutch
   - Accelerator
   - Brake controls
   - Foot brake
   - Trailer brake
• Parking brake
• Retarder controls
• Transmission controls
• Interaxle differential lock
• Horns
• Windshield wiper/washer
• Lights
• Headlights
• Dimmer switch (high / low beams)
• Turn signal
• 4-way flashers

Check the emergency equipment:
Working fire extinguisher
Spare electrical fuses
Three reflective triangles
Seat Belt

4. Make a walk-around inspection:
Check that all lights are working
Check the left front side
• Driver's door glass and mirrors (check mounts for tightness, glass for cracks)
• Door latches
• Left front tires and wheels (inflation, condition, tread depth, hubs, lugs)
• Left front suspension (mounts / hangers, leaf springs, shock absorbers, etc)
• Left front brake (brake hose, chamber, slack adjuster, drum, linings)
• Left front fuel tank (proper mounting – not loose, no leaks)
• Exhaust – muffler, stack, pipe (nothing loose or missing)
• Frame (no cracks)

Also check:
✓ Emergency (red) air line, Service (blue) air line and electrical line connections
✓ Air lines and electrical wiring--secured against snagging, rubbing, wearing
✓ Header board and clearance lights
✓ Spare tire carrier or rack
✓ Spare tire and/or wheel securely mounted in rack
✓ Spare tire and wheel (proper size, properly inflated)

Cargo (for trucks and tractor trailers)
• Cargo properly blocked, braced, tied, and chained
• Header board adequate and secure and lights or reflectors are working
• Side boards and stakes strong enough, free of damage and properly set in place
• Canvas or tarp (if required) properly secured to prevent tearing, billowing or blocking of mirrors
• If vehicle is oversized, check that all required signs (flags, lamps and reflectors are safely and properly mounted and that you have all required permits
• Check that all curbside cargo compartment doors are securely closed, latched or locked and that required security seals are in place.
• Check the frame of the trailer for damage
• Check Emergency Air, Service Air and Electrical lines make sure glad hands and connectors are secure
• Check 5th wheel – make sure it is greased and that the locking jaws are securely anchored around king pin shank
• Check to make sure no gap exists between trailer apron and 5th wheel
• Check drive shaft and universal joint
• Check cat walk
• Check the landing gear
• Be sure that the landing gear is fully raised. Check for missing, bent or damaged parts.
• Make sure the crank handle is in place and secured.
• If the landing gear is power operated, make sure that there are no air or hydraulic leaks.

**Left Rear Side**
- Tires (inflation, condition and tread depth)
- Wheels and rims (check for cracks, loose or rusted lug nuts)
- Left rear suspension (mounts / hangers, leaf springs, shock absorbers, bellows)
- Left rear brake (brake hose, chamber, slack adjuster, drum, linings)
- Lights and reflectors

**Rear of Trailer**
- Lights and reflectors
- License plate
- Door / door lock - secure
- Splash guards
- Cargo is secure

**Right Rear Side**
- Tires (inflation, condition and tread depth)
- Wheels and rims (check for cracks, loose or rusted lug nuts)
- Right rear suspension (mounts / hangers, leaf springs, shock absorbers, bellows)
- Right rear brake (brake hose, chamber, slack adjuster, drum, linings)
- Lights and reflectors

**Right front side**
Same as Left front side
60% or more of pre-trip test will be suspension, brakes and wheels/tires so be sure to know these systems very well. Appendix A and Appendix B are diagrams of Steering System and Suspension System. It is important to memorize these systems before your exams.

5. Start the engine and check the brake system

Hydraulic brakes
If the vehicle has hydraulic brakes, pump the brake pedal 3 times. Apply firm pressure to the pedal and hold for 5 seconds. The pedal should not move. If it does, there may be a leak or other problem. Get it fixed before driving.

Make sure you practice a seven step air brake check prior to going to take your skills test. Failure to know or mention any part of this air brake test can result in a test failure.

Air brakes - Seven Step Check
The Seven-Step Air Brake check is designed to test the governor cut-in and cut-out pressures, air pressure leakage, warning buzzer, brake valves and air pressure rebuild rates. Brakes off means the yellow and/or red valve is pushed in (on = valve out).

1. Engine on / Brakes on – check gauges to make sure governor cuts compressor off at 120 psi. Pump brakes until pressure drops below 100 psi to make sure governor cuts compressor on.

2. Engine off / Brakes off – do not touch brakes – watch gauges to make sure pressure does not drop more than 3 psi in one minute.

3. Press and hold brake pedal – watch gauges to make sure pressure does not drop more than 4 psi in one minute.

4. Turn key on / Engine off / Brakes off – pump brake until pressure drops to 60 psi – warning buzzer should sound at or before 60 psi.

5. Continue pumping brakes until reaching 20 to 40 psi – Emergency (red) and Service (yellow) brake valves should pop out turning brakes on.

6. Rebuild air pressure in tank – hold accelerator at 1500 RPM. Watch air gauges and notice that pressure rate of build between 85 psi and 100 psi should not take more than 45 seconds.

7. Perform tug tests. Tug against Parking Brake only. Tug against Emergency Brake only. Tug against Hand Brake only. Test service brake by accelerating to 5mph and pressing brake pedal. If vehicle pulls to one side, this indicates a brake alignment problem.
Control of Your Vehicle

To drive a vehicle safely, you must be able to control its speed and direction. Safe operation of a commercial vehicle requires skills in:

- Accelerating
- Steering
- Shifting gears

Be sure to apply the parking brake when you leave your vehicle.

Accelerating

- Partly engage the clutch before taking your foot off the brake.
- Use the parking brake to keep from rolling back. Release it only when you have enough power to keep from rolling back.
- Speed up smoothly and gradually so the vehicle does not jerk. Sudden acceleration can cause mechanical damage.

If you are pulling a trailer, sudden acceleration can damage the coupling.

- Speed up slowly when traction is poor, such as in rain or snow. If you use too much power, the drive wheels spin. If the drive wheel spins, let up on the accelerator.

Steering

- Hold the steering wheel firmly with both hands.
- Your hands should be at the 9 o'clock and 3 o'clock position on the steering wheel.

Backing Safely

Because you cannot see everything behind your vehicle, backing is always dangerous. Avoid backing whenever you can.

When you must back, follow these safety rules:

1. **Look at your path before you begin backing.** Get out of the vehicle and check your clearance to the sides and overhead.
2. **Turn on four-way flashers and blow the horn** before backing.
3. **Back slowly.** Use the lowest reverse gear.
4. **Back and turn toward the driver's side.** This allows you to see better. You can watch the rear of your vehicle by looking out the side window. Use driver-side backing even if it means going around the block to put your vehicle in this position. The extra safety is worth it.
5. **Use a helper.** A helper can check your blind spots for you. The helper should stand where he or she has a view of the rear of the truck and where the driver can see the helper. If you lose sight of the helper, stop. He may be in a place of danger. Before you begin backing, agree on hand signals that you both understand.

Backing with a Trailer

When backing a car, straight truck or bus, you turn the top of the steering wheel in the direction that you want to go. When backing a trailer, turn the steering wheel in the
opposite direction. Once the trailer starts to turn, you must turn the wheel the other way to follow the trailer.

- When you back a trailer, try to position your vehicle so you can back in a straight line. If you must back on a curved path, back to the driver's side so you can see.
- Back Slowly.
- Use both mirrors. The mirrors help you see if the trailer is staying on the proper path. Correct the trailer's path by turning the top of the steering wheel in the direction of the drift.
- Pull forward. Make pull-ups to reposition your vehicle as needed.

Shifting Gears - Manual Transmissions

Basic method for shifting up: Most heavy vehicles with manual transmissions require double clutching to change gears. This is the basic method:

- Release the accelerator. Push in the clutch and shift to neutral.
- Release the clutch
- Let the engine and gears slow to the RPM required for the next gear. (This takes practice.)
- Push in the clutch and shift to the higher gear.
- Release the clutch and press the accelerator at the same time.

Shifting gears using double clutching requires practice. If you remain too long in neutral, you may have trouble putting the vehicle into the next gear. Don't try to force it. Return to neutral, release the clutch, increase engine speed to match road speed and try again.

There are two ways to know when to shift up:

1. **Engine speed (RPM).** Study the manual for your vehicle and learn the operating RPM range. Watch your tachometer and shift up when your engine reaches the top of the range.
2. **Road speed (MPH).** Learn the speeds that each gear is good for. Then you can use the speedometer to know when to shift up.

Basic method for shifting down:

- Downshifting requires knowing when to shift. Use either the tachometer or the speedometer to decide when to downshift.
- Take your foot off the accelerator. Push in the clutch and shift to neutral.
- Release the clutch
- Press the accelerator. Increase engine and gear speed to the RPM required in the lower gear.
- Push in the clutch and shift to the lower gear at the same time.
- Release the clutch and press the accelerator at the same time.

You should downshift:

1. **Before starting down a hill.** Slow down and shift down to a speed that you can control without using the brakes hard. Make sure your gear is low enough. Usually you will use a lower gear than you would use to climb the same hill.
2. **Before entering a curve.** Slow down to a safe speed. Downshift **before** you enter the curve. This helps you control your vehicle while turning. You can begin to accelerate as you leave the curve.

Retarders (Jake brake) - Electric or Hydraulic

Retarders help slow a vehicle so that you don't need to use your brakes as much. This reduces brake wear and gives you another way to slow your vehicle. All retarders can be
turned on or off by the driver. When turned on, retarders apply their braking power whenever you take your foot completely off the accelerator. They apply braking power only to the drive wheels.

If your drive wheels have poor traction, the retarder may cause them to skid. 
Always turn off the retarder when the road is wet, icy or covered with snow, especially if the unit is empty or lightly loaded.

To be a safe driver, you need to know what's going on all around your vehicle.

Look Ahead
Because stopping or changing lanes may take a lot of distance, you must know what the traffic is doing on all sides of you.

Expert drivers look far ahead so they will know how much room they have to move. They try to focus their eyes 12 to 15 seconds ahead.

Also look for slow-moving vehicles—these vehicles may be marked with a red triangle with an orange center.

Use Your Mirrors
Look in your mirrors to check the traffic around you and to check your vehicle. Check your mirrors when you change lanes, turn or merge. Check your mirrors quickly and return your attention to the road ahead.
Use your mirrors to check your tires. If you are carrying open cargo, use the mirrors to check it. Look for loose straps, ropes or chains. Watch for a flapping or ballooning tarp. Blind spots are danger areas, which cannot be seen in your mirrors. Therefore, many vehicles have curved mirrors that show a wider area than flat mirrors. Remember, everything in a curved mirror appears smaller than it really is. Objects also seem farther away than they really are.
Always make mirror adjustments before you start your trip. Mirrors can only be checked accurately when the trailer(s) are straight.

Communication
It is important to know what is going on around your vehicle. But, it is also important to let others know what you are doing.
Use your vehicle to communicate with other drivers. You can communicate with your headlights, brake lights, signal lights and horn.

Signal Ahead
• Signal early
• Signal before you turn, merge or change lanes.
• Brake early and slow gradually for turns.
• Flash your brake lights to warn other drivers that you need to slow down or stop. Don't stop suddenly.
• Turn off your signal after you make the turn, merge or lane change.
• Use your 4-way emergency flashers when moving slowly or when you are parked.
• Don't signal other drivers to pass you. This could cause a crash.
Pass with Caution
• Check your side mirrors for traffic approaching you from behind.
• Check ahead. Do you have sufficient room to pass?
• Use your turn signal.
• Just before you begin passing, check your mirrors and blind spots once more for approaching traffic.

Communicate your Presence to Others
• Don't assume that other drivers, bicyclists, or pedestrians can see or hear your vehicle.
• Use your low beam headlights at dawn and dusk. Use your low beam headlights in fog, rain or snow so other drivers will see you.
• When you pass, tap your horn lightly.
• Use your horn only when needed. Otherwise, your horn may scare others.
• When you stop on the side of the road:
  • Turn on your 4-way emergency flashers.
  • Place reflective triangles around your vehicle. If you stop on a road or the shoulder, you must put out emergency warning devices (reflective triangles or flares) within 10 minutes.

Place the warning devices in the following locations:

On two-lane roads carrying traffic in both directions or on an undivided highway
  1. 100 feet from the front corner of your vehicle.
  2. 10 feet behind your vehicle.
  3. 100 feet from the rear corner of your vehicle

On a one-way or divided highway
  1. 10 feet from the front corner of your vehicle.
  2. 100 feet from the rear corner of your vehicle.
  3. 100 feet from the previous warning device.
Important: When you place the triangles, hold them between yourself and the oncoming traffic. This helps ensure your safety.

Controlling Speed
Driving too fast is the main cause of accidents. You should control your speed to match your driving conditions. Adjust speed according to traffic, weather, traction, visibility, hills and curves.

Stopping Distance
Three things add up to determine stopping distance:
   1. Perception Distance
   2. Reaction Distance
   3. Braking Distance

Perception distance is the distance your vehicle travels from the time your eyes see a hazard until your brain
Reaction distance is the distance traveled from the time your brain tells your foot to move from the accelerator until the time your foot pushes the brake pedal.
Braking distance is the distance it takes the vehicle to stop once you hit the brakes.

At 55 mph it will take about six seconds to stop. During six seconds the stopping distance will be about as long as a football field (100 yards).

When you double your speed it takes FOUR times the distance to stop.

Wet roads can double stopping distance. It is also important to be able to recognize slippery surfaces such as bridges or shaded areas. Black ice is a thin layer of ice that is clear enough to see the road underneath it.

A build up of water or slush on the road can cause hydroplaning. If your tires loose contact with the surface of the road while hydroplaning, the best thing to do is let off of the accelerator and push in the clutch. Do not use the brakes until tires regain contact with the road.

Things to remember about controlling speed and stopping distance:
• On packed snow, reduce your speed by ½ or more
• If the road is icy, reduce your speed to a crawl. Stop driving as soon as you can
• Empty trucks require greater stopping distance. An empty vehicle has less traction. The brakes are designed to control the maximum weight of the unit; therefore, the brakes lock up more readily when the trailer is empty or lightly loaded. This can cause skidding and loss of control.
• Shady parts of a road will remain icy and slippery long after open areas have melted.
• Bridges freeze before the road freezes. Be careful when the temperature is around 32 degrees F.
• Slight melting makes ice wet. Wet ice is more slippery than ice that is not wet.
• Black ice is a thin layer that is clear enough that you can see the road underneath. It makes the road look wet. When the temperature is below freezing and the road looks wet, watch for black ice.
• If ice is on the front of your mirror, mirror support or antenna, the road surface is probably starting to ice up.
• Roads are very slippery when rain first begins. Just after rain begins, water mixes with oil on the road making it unusually slippery.

Hydroplaning - In some weather, water or slush collects on the road. When this happens, your vehicle can hydroplane. The tires lose contact with the road and have little or no traction. You may not be able to steer or brake. Hydroplaning can occur at speeds as low as 30 mph. Hydroplaning is more likely if tire pressure is low or the tread is worn.
• Take your foot off the accelerator and push in the clutch.
• This will slow your vehicle and let the wheels turn freely.
• Do not use the brakes to slow down.
• If the drive wheels begin to skid, push the clutch to let them turn freely.

Managing Space
To be a safe driver, you need space all around your vehicle. When something goes wrong, space gives you time to think and to take action. While this is true for all vehicles, it is very important for large vehicles. Large vehicles require more space for stopping and turning.

Space Ahead
You need space in front of you in case you must stop suddenly also know as following distance. In crashes, trucks and buses most often hit the vehicle in front of them. This is because they were following too closely. If the vehicle ahead of you is smaller than your vehicle, it can probably stop faster than you can. If you follow too closely, you could hit it if the driver stops suddenly. Use the rule of seconds to determine safe following distance.

The rule of seconds
• If you are driving below 40 mph, maintain at least one second for each 10 feet of vehicle length.
• At speeds over 40 mph, add an extra second for safety.

Here's how it works.
• Watch the vehicle ahead pass a fixed point, such as an overpass, sign, fence, corner or other marker.
• Begin counting off the seconds it takes you to reach the same place in the road.
• If you reach the mark before you have counted off the correct number of seconds, you're following too closely. Slow down and increase your following distance.

Examples:
• If you are driving a 40-foot vehicle at speeds under 40 mph, leave 4 seconds between you and the vehicle ahead.
  One second for each 10 feet of vehicle length = 1X4 or 4 seconds.
• If you are driving a 40-foot vehicle at speeds over 40 mph, leave 5 seconds between you and the vehicle ahead. One second for each 10 feet of vehicle length plus an additional second for safety: 1X4 = 4 plus an extra second for safety = 5 seconds.
Space Behind
You can't keep other drivers from following you too closely. But you can take action to increase your safety:

- Stay to the right. Drivers often tailgate when heavy vehicles can't keep up with traffic. If a heavy load slows you down, stay in the right lane. If you are going uphill, do not pass other slow vehicles unless you can pass quickly and safely.
- Deal with tailgaters safely.
- Avoid quick changes. Before you slow down or turn, signal early and reduce your speed gradually.
- Increase your following distance. Extra space in front of your vehicle can help you avoid sudden stops. It also makes it easier for the tailgater to pass you.
- Don't speed up. It's safer to be tailgated at a low speed than at a high speed.
- Avoid tricks. Don't turn on your tail lights or flash your brake lights.

Space to the Sides

- Keep your vehicle centered in the lane and maintain safe clearance on either side.
- Avoid traveling beside other vehicles. In heavy traffic, keep as much space as possible between your vehicle and other vehicles. If you must travel alongside another vehicle, drop back or pull forward so that you are sure the other driver can see you.
- High winds may cause your vehicle to sway. This problem is worse for lighter vehicles, such as empty trucks. High winds may be especially bad coming out of tunnels.

Space Overhead
Because commercial vehicles are larger than most vehicles, watch out for overhead objects. Make sure you always have overhead clearance.

- The weight of a loaded vehicle changes it height. An empty vehicle is taller than a loaded one
- Before backing, get out of the vehicle and check for overhanging objects such as trees, branches or electric wires. It's easy to miss these things when backing.
- Don't assume that the heights posted at bridges and overpasses are correct. Repaving or packed snow may have reduced the clearance since the signed were posted.
- If you are not sure that you have space to pass under an object, go slowly; or take another route.

Definition: Trailer wheels follow a different path than the tractor wheels. This is called offtracking.

Space for Turns
Because of wide turning and offtracking, large vehicles can hit other vehicles or objects during turns.
When turning right:
- Turn slowly to give yourself and others time to avoid problems.
- If you cannot make the right turn without swinging into another lane, turn wide as you complete the turn.
- Keep the rear of your vehicle close to the curb. This will stop other drivers from passing you on the right.
- Don't turn to the left as you start the turn. The driver behind you may think you are turning left and try to pass you on the right.
- If you must cross into an oncoming lane to make a turn, watch out for vehicles coming toward you. Give them room to pass or stop. However, don't back up for them. You could hit the vehicle behind you.

When turning left:
- Reach the center of the intersection before you begin your turn. If you turn too soon, your vehicle could hit another vehicle because of offtracking.
- If there are two lanes, always use the right turn lane. Don't begin a left turn in the left lane because you may have to swing right to complete the turn. You can see drivers on your left easier than those on your right.

Space to Cross or Enter Traffic
Keep these points in mind when crossing or entering traffic.
- Because commercial vehicles are larger and accelerate more slowly than passenger cars, you may need a much larger gap to enter traffic.
- Acceleration varies with your load. Allow more room if your vehicle is fully loaded.
Before you begin across a road, make sure you can get all the way across before traffic reaches you.
Speed and Curves
If you take a curve too fast, your tires can lose traction with the road. This could cause your vehicle to skid off the road or roll over. Tests show that trucks with a high center of gravity can roll over at the posted speed limit for a curve.
• Slow to a safe speed before you enter a curve.
• Braking in a curve is dangerous because you can lock the wheels and cause a skid.
• Never exceed the posted speed limit for a curve.
• Downshift to a gear that will let you accelerate slightly in the curve. This will help you keep control.

Speed and Distance Ahead
• You should always be able to stop within the distance you can see ahead.
• Fog, rain or other conditions may require you to slow down.

Speed on Downgrades
• As you go downhill, your vehicle's speed increases.
• Never exceed the maximum safe speed on a downgrade.
• Downshift to a low gear before starting down a grade.
• You must use the braking effect of the engine to control your speed on downgrades. The engine's braking effect is greatest when it is near the governed RPMs and the transmission is in a low gear.
• Save your brakes so that you can slow or stop as required by road and traffic conditions.

Braking
Emergency braking does not mean pushing down on the brake pedal as hard as you can. That will lock the wheels and cause a skid. Instead, brake so that you keep your vehicle in a straight line. You can use the controlled braking method or the stab braking method.

Controlled Braking
• Apply the brakes as hard as you can without locking the wheels.
• Steer as little as possible.
• If you need to steer harder or if the wheels lock, release the brakes.
• Reapply the brakes as soon as possible.

Stab Braking
• Use stab braking only on vehicles that do not have anti-lock brake systems.
• Apply your brakes fully.
• Release the brakes when the wheels lock up.
• As soon as the wheels start rolling, apply the brakes fully again. It can take up to one second for the wheels to start rolling after you release the brakes. If you reapply the brakes before the wheels start rolling, the vehicle will not straighten out.

Definition: Counter-steer means to turn your wheel in the opposite direction. Emergency steering and counter-steering are two parts of one driving action.

Steering to Avoid a Crash
• Stopping is not always the safest thing to do in an emergency. If you don't have enough room to stop, you may have to steer away from what's ahead. Many times you
can turn to miss an obstacle more quickly than you can stop. Often, steering to the right is the best answer in an emergency situation. However, top-heavy vehicles and tractors with multiply trailers may roll over. When steering to avoid a crash, take the following steps.

- Keep both hands on the steering wheel.
- Do not apply the brakes while you are turning. Applying the brakes could lock your wheels and cause you to skid out of control.
- Do not turn more than you need. The more sharply you turn, the greater the risk of turning over or skidding.
- Be ready to counter-steer as soon as you have passed whatever was in your path. In some emergencies, you may have to drive off the road. Most shoulders are strong enough to support the weight of a large vehicle and offer an escape route. Follow these steps if you must drive off the road.
- Avoid braking until your speed has dropped to about 20 mph. Then brake gently to avoid skidding.
- Keep one set of wheels on the pavement if possible. This helps you to maintain control.
- Stay on the shoulder until your vehicle comes to a stop. Signal and check your mirrors before returning to the road.
- If you must return to the road before you stop, hold the wheel tightly and turn sharply enough to get back on the road safely. Don't try to edge on to the road gradually. This could cause you to lose control. As soon as both front tires are on the paved surface, counter-steer immediately.

**Skid Control and Recovery**

A skid happens when the tires lose their grip on the road. The best way to stop any skid is to restore traction to the tires.

The four main causes of skids are:

1. **Overbraking.** Braking too hard can lock the wheels causing a skid. Skids may also happen if you use the speed retarder when the road is slippery.
2. **Oversteering** or turning the wheels too sharply may cause a skid.
3. **Overacceleration** or supplying too much power to the drive wheels can cause them to spin.
4. **Driving too fast.** Most serious skids result from driving too fast for road conditions. Drivers who adjust their driving to fit the conditions don’t have to overaccelerate, brake hard or oversteer to avoid hazards.

**Rear-Wheel (drive-wheel) skids** are the most common types of skid. They are caused by overacceleration or overbraking.

- **Overacceleration skids** usually happen on ice or snow. Stop the skid by taking your foot off the accelerator. If the road is slippery, push in the clutch. This allows the wheels to roll freely and regain traction.
- **Overbraking skids** happen when the rear drive wheels lock. Locked wheels have less traction than rolling wheels and usually slide sideways. A bus or straight truck will slide sideways. A vehicle towing a trailer will jackknife.

Take the following actions to stop a rear-wheel braking skid:
1. Stop braking. This will let the rear wheels roll and keep them from sliding further. If you are on a slippery surface, push in the clutch to let the wheels turn freely.

2. Turn quickly. If your vehicle begins to slide sideways, quickly steer in the direction you want the vehicle to go.

3. Counter-steer. As soon as your vehicle begins to move in the correct direction, turn the steering wheel quickly in the opposite direction. This will prevent a skid in the opposite direction. Be careful not to overcorrect.

**Front wheel skids** are often caused by driving too fast for the conditions. In a front wheel skid, the front of the vehicle continues in a straight line no matter how much you turn the steering wheel. You may not be able to steer around a curve or turn. Lack of tread on the front tires and cargo loaded incorrectly may also cause front-wheel skids.

- The only way to stop a front-wheel skid is to let your vehicle slow down.
- Stop turning and braking as hard.
- Slow down as quickly as possible without skidding.

### Hazardous Conditions
Driving becomes hazardous when visibility is reduced or when the road surface is covered with rain, snow or ice. Reduce your speed and increase your following distance.

**Night Driving - Use your high beams when it is safe and legal to do so.**
High beams increase your ability to see. However, glare from your headlights can blind other drivers. Dim your lights within 500 feet of an oncoming vehicle. Dim your light when following within 200 feet of another vehicle. If a driver coming toward you doesn't dim his lights, don't get back by turning on your high beams. This increases the chance of a crash.

**Don't look directly at bright lights when driving.** Look to the right of the road. Watch the side of the road when another car or truck comes toward you. It can take several seconds to recover from blindness caused by glare. Even two seconds of glare blindness can be dangerous. A vehicle going 55 mph will travel more than half the distance of a football field during that time.

**Get enough sleep before you drive.** Being tired and lack of alertness are problems for drivers at night. Most people are less alert at night, especially after midnight. This is even truer if you have been driving for a long time.

**If you are sleepy, pull off the road and get some sleep.** You cannot control your need for sleep. Drivers who are tired may not see hazards as soon or react as quickly. This increases the chance of a crash.

**Drive slower when lighting is poor or confusing.** Drive slowly enough so that you can stop within the distance that you can see ahead.

**Watch for drunk drivers.** Be extra careful when bars and restaurants are closing. Watch drivers who weave, drive too slow or too fast, or stop for no reason.

**Adjust your speed so that you can stop within the distance that you can see ahead. With your low beams, you can see ahead about 250 feet.** With your high beam, you can see ahead between 300 and 500 feet. If you are driving with your low beams on, you should be able to stop within 250 feet. If you are driving with your high beams on, you should be able to stop within 300 to 500 feet.
Be sure that all lights and reflectors are clean and working so that other drivers can see you.

Be sure that your windshield and mirrors are clean. Dirt on your windshield and mirrors can increase the glare from other vehicles' lights. This will make it hard for you to see other vehicles and hazards.

Fog
Fog reflects light and can reflect your own headlights back into your eyes. Use only your low beams. Look for road edge markings to guide you. Even light fog reduces your ability to see and judge distances. If possible, pull off the road and wait until the fog has lifted. If you must drive, be sure to:
• Obey all fog-related warning signs.
• Reduce you speed.
• Turn on all your lights.
• Use only your low beams.
• Be prepared for sudden stops.

Cold Weather Driving
Vehicle checks
During your pre-trip inspection, pay extra attention to the following items. Be sure that these systems are working correctly and that you know how to use them before you begin driving.

Coolant and antifreeze
Defrosting and heating equipment
Wipers and washers
Tires (Be sure your tires have enough tread to provide sufficient traction to steer and push the vehicle through snow.)

Clear your vehicle of all snow and ice. Be sure your lights, reflectors, windows and mirrors, handholds, steps and deck plates are free of snow and ice.
As a precaution, carry the right number of chains and extra cross links. Make sure they fit your drive tires. Check the chains for broken hooks, worn or broken cross links and bent or broken side chains. Learn how to put the chains on before you need to use them.
Remove ice from the radiator shutters. Make sure the winterfront is not closed too tightly. If the shutters freeze or the winterfront is closed too much, the engine may overheat.
Check the exhaust system for loose parts and for signs of leaks. Loose connections can let carbon monoxide leak into the vehicle. This can cause sleepiness. In large amounts it can kill you.

Driving Tips
Drive smoothly and slowly on slippery roads. Don't hurry. If the roads are very slippery, don't drive at all. Stop at the first safe place.
Adjust turning and braking to road conditions. Make turns as gently as possible. Don't brake any harder than necessary. Don't use the engine brake or speed retarder on slippery or wet roads. They can cause the driving wheels to skid.
Adjust speed to conditions. Don't pass slower vehicles unless necessary. Go slow and watch far enough ahead to keep a steady speed. Avoid slowing down and speeding up. Take curves at slower speeds and don't brake while you're in the curve.

Remember, as the temperature rises and the ice begins to melt, the road becomes even more slippery.

Adjust space to road conditions. Don't drive beside other vehicles. Keep extra following distance. Watch ahead for slowing or stopped traffic. Slow down gradually.

Avoid driving through deep puddles or flowing water. Water in your brakes can cause the brakes to be weak, apply unevenly or to grab. This reduces braking power and causes wheel lockups and pulling to one side. It could cause a jackknife if you are pulling a trailer. If you must drive through water, follow these steps:

- Slow down.
- Put your transmission in low gear. Engage the clutch smoothly.
- Put on the brakes gently. This presses the linings against the brake drums or discs and keeps mud, silt, sand and water out of your brakes.
- Increase the engine RPM and cross the water while keeping light pressure on your brakes.
- As soon as you are out of the water, maintain light pressure on the brakes for a short distance. This will heat them and dry them out.

Make a test stop as soon as it is safe. If, the brakes do not work well, drive for another short distance with light pressure on the brakes. Don't apply too much pressure on the brakes or you may overheat the brake drums and linings.

Hot Weather Driving

Vehicle Checks

Make sure you have plenty of engine oil and engine coolant. Engine oil lubricates the engine and helps keep it cool. Antifreeze helps the engine under hot conditions and in cold conditions. While you are driving, check the oil temperature gauge and the engine temperature gage. If these gauges show a temperature higher than normal, stop driving as soon as safely possible. There could be something wrong that could lead to engine failure or fire.

Check engine belts and hoses. Check the belts for tightness by pressing on the belts. Be sure coolant hoses are in good condition. Loose belts or broken hoses can lead to engine failure and fire.

While you're driving, inspect the tires every two hours or every 100 miles. Air pressure increases with temperature. Do not let air out. If you let air out, the pressure will be too low when the tires cool. If a tire is too hot to touch, remain stopped until the tire cools. Otherwise, the tire may blow out or catch on fire.

Never remove the radiator cap or any part of the pressurized system until the system has cooled. Steam and boiling water can spray under pressure and cause severe burns. If you can touch the radiator cap with your bare hand, it is probably cool enough to open. You can also check the coolant level of a hot engine if a coolant container is part of a pressurized system.

Driving Tips

Watch for bleeding tar. In hot weather, spots where tar bleeds to the road surface are very slippery.
Drive slow enough to prevent overheating. High speeds create more heat for tires and the engine. In desert conditions, the heat may rise to a dangerous level. The heat will increase the chance of tire failure, engine failure and fire.

Mountain Driving
Gravity plays a major role in mountain driving. On upgrades, gravity slows you down. The steeper and longer the grade, and the heavier you load, the slower you will drive. When coming down a downgrade, gravity increases the speed of your vehicle. Try to plan ahead and get information about any steep grades along your planned route.

Select a safe speed. Base your speed on the following:
The weight of your vehicle and cargo
Length of the grade
Steepness of the grade
Road conditions
Weather conditions

Never drive faster than the speed posted on "Maximum Safe Speed" signs. Remember that the speed posted on these signs could be too fast for a large vehicle or for the weather conditions.

Pay attention to warning signs that tell the length and steepness of the grade. Use the braking effect of your engine to maintain a safe speed. The braking effect of the engine is best when the transmission is in a low gear. Save your brakes so you can slow down or stop for traffic and road conditions.

Shift the transmission to a lower gear before you start down the grade. Don't downshift after you've gained speed. You won't be able to shift into a lower gear. You may not be able to get back into any gear. For older trucks, use the same gear for going down a hill that you would use to climb the hill. New trucks have more powerful engines and can climb hills in higher gears than older trucks. Therefore in newer trucks, use a lower gear for going down a hill than you would use for climbing the hill.

Be sure your brakes are adjusted before you begin a trip through the mountains. If you use your brakes too much, they will fade. Excessive heat causes the brake drums to expand. As a result, the brake shoes have to travel further and exert less stopping force. This situation is made even worse if the brakes were not properly adjusted to begin with. Remember, the more you use your brakes, the more quickly they will get out of adjustment.

Proper braking technique
Braking effect of the engine should be the primary way speed is controlled when going down hill. Be careful not to overheat brakes by following these steps:
1. Apply the brakes just enough to feel a definite slowdown.
2. Reduce your speed to 5 mph below your safe speed. This should take about 3 seconds. Then, release the brakes.
3. When your speed has increased to your safe speed, repeat the first steps.

Know where the escape ramps are located on your route. Escape ramps have been built on many steep downgrades. They are made to stop runaway vehicles without
injuring drivers and passengers. Escape ramps use a long bed of loose soft material to slow runaway vehicles. **Use them if you lose your brakes.**

### Railroad Crossing

Railroad crossings are always dangerous. Always look both ways. Trains may come at any time from either direction. Follow these rules when crossing railroad tracks.

- Don't try to race a train to the crossing. It is very difficult to judge the speed of a train.
- Reduce your speed. Be sure you can stop before you reach the tracks if necessary.
- Because of the noise in your cab, you won't hear the train horn until the train is very close.
- Don't rely on train warning signals or flagmen to let you know of an approaching train.
- Double tracks require more caution. A train on one track may hide a train on the other track.
- After one train has cleared the crossing, check again. Be sure that no other train is coming before you cross the tracks.
- Railroad crossing with steep approaches can cause your vehicle to hang up on the tracks. This is most likely to happen to vehicles that have low ground clearance, such as drop frame trailers and car carriers. If you get hung up on a railroad crossing, notify the police immediately so that the nearby trains can be stopped.
- Be sure you can get all the way across the tracks before you begin to cross.
- Do not shift gears when crossing railroad tracks.
- A full stop is required at railroad crossings if you are carrying passengers or hazardous cargo. You must also stop if the lights are flashing, the arms are down or you are directed to stop by signs or the police.

### Equipment Failures

#### Brake Failures

Brakes kept in good condition seldom fail. Most hydraulic brake failures occur for two reasons: 1) loss of hydraulic pressure or 2) brake fade on long hills

#### Loss of hydraulic pressure

When the system won't build up pressure, the brake pedal will feel spongy or go to the floor. If you loose brake pressure while driving:

**Downshift.** Putting your vehicle in a lower gear will help slow the vehicle.

**Pump the brakes.** This will sometimes generate enough hydraulic pressure to stop the vehicle.

**Find an escape route.** While slowing your vehicle, look for an escape route—an open field, side-street or escape ramp.

#### Airbrake Fading or Failure

Excessive use of the service brakes causes overheating and leads to brake fade. Excessive heat in the brakes causes chemical changes in the lining which reduce friction and cause the brake drums to expand. As the overheated drums expand, the brake shoes and linings have to move farther to contact the drums. The force of contact between the shoes and drums is also reduced. Overuse may increase brake fade until the vehicle cannot be slowed or stopped at all. Brakes that are out of adjustment may also cause brake fade. To safely control the vehicle, every brake must do its share of the work. Brakes out of adjustment stop doing their share before brakes that are in
adjustment. This causes the other brakes to overheat and fade. Brakes can get out of adjustment quickly, especially when they are hot. Therefore, brake adjustment must be checked frequently.

**Brake failure on downgrades.** Driving slowly and braking properly will almost always prevent brake fade on long downgrades. Once the brakes fail, however, you must look outside your vehicle for something to stop it. Your best hope is an escape ramp. Ramps are usually located a few miles from the top of a downgrade. Signs will be posted telling you about it. Use the escape ramp if it is available. If you don't see an escape ramp, take the least hazardous escape route--an open field or a side road that flattens out or turns up hill. Look for an escape route as soon as you know that your brakes don't work. The longer you wait the more speed your vehicle will gain and it will be harder to stop.

**Tire Failure**
The sooner that you know a tire has failed the more time you will have to react. The major signs of a tire failure are:

- **Sound -** A loud bang often indicates a blowout. However, it may take several seconds for your vehicle to react and you might think that the sound came from another vehicle. Any time you hear a tire blow, assume that it was one of your tires.
- **Vibration -** If your vehicle thumps or vibrates, a tire may have gone flat. With a rear tire, this may be the only sign you get.
- **Feel -** If the steering feels heavy, one of the front tires has probably failed. Sometimes, failure of a rear tire causes the vehicle to slide back and forth or fishtail. However, dual rear tires usually prevent this.

If a tire fails, take the following steps:
1. Hold the steering wheel firmly. If a front tire fails, it can twist the steering wheel out of your hand. Keep a firm grip on the steering wheel with both hands at all times.
2. Stay off the brakes. Braking when a tire has failed could cause you to lose control. Once the vehicle has slowed, brake gently and pull off the road.
3. Check the tires. Even if the vehicle seems to be handling normally, many times you won't know that a dual tire is flat unless you look at it.

**Crashes**
If you are in a crash and not seriously hurt, you need to take three steps to prevent further damage or injury:
- Protect the area.
- Notify the authorities.
- Care for the injured.

**Protect the Area** to prevent another crash - this is the first thing you should do.
- If your vehicle is involved in the crash, try to move it to the side of the road. This will help prevent another crash.
- If you are stopping to help at the scene of a crash, park away from the crash. The area around the crash will be needed by emergency vehicles.
- Put on your flashers.
- Set out reflective triangles to warn other traffic. Make sure that other drivers will see them in time to avoid another crash.
**Notify the Authorities**
If you have a CB or cellular telephone, put out a call over the emergency channel or dial 911 before you get out of your vehicle. If not, wait until the crash scene has been protected, then phone or send someone to phone the police. Remember to determine where you are so you can give an accurate location.

**Care for the Injured**
If a qualified person is helping the injured, stay out of the way unless asked to assist. Otherwise, do the best you can to help anyone who is injured.
- Don't move a severely injured person unless there is a danger of fire or passing traffic makes it necessary.
- Stop heavy bleeding by applying direct pressure to the wound.
- Keep the injured person warm.

**Fires**
Truck fires can cause damage and injury. Learn the causes of fires and how to prevent them. Know what to do to extinguish fires.

**Causes of Fire**
*After accidents:* spilled fuel, improper use of flares.
*Tire:* under-inflated tires and dual tires that touch.
*Electrical system:* short circuits due to damaged insulation, loose connections.
*Fuel:* driver smoking, improper fueling, loose fuel connections.
*Cargo:* flammable cargo improperly sealed or loaded cargo, poor ventilation.

**Fire Prevention**
*Pre-trip inspection:* Make a complete inspection of the electrical, fuel and exhaust systems, tires and cargo. Be sure that your fire extinguisher is charged. Be sure that you know how to use it.
*Inspections while traveling:* Check the tires and hubs for signs of excessive heat whenever you stop during a trip. Frequently check the instruments and gauges for signs of overheating. Use your mirrors to look for signs of smoke from the tires or other areas of the vehicle.
*Safe procedures:* Don't get careless. Always follow correct safety procedures for fueling the vehicle, using brakes, handling flares and other activities that can cause a fire.

**Fire Fighting**
Your life and the lives of others may depend on your ability to fight a fire. Study the instructions printed on the extinguisher. Know how your fire extinguisher works before you drive the vehicle.
If a fire occurs:
*Pull off the road.* Park in an open area away from buildings, trees, brush, other vehicles or anything that might catch fire.
*Don't pull into a service station.* Notify the police of your problem and location.
*Keep the fire from spreading* before you try to put it out.
*If your engine is on fire,* turn off the engine as soon as you can. Open the hood as little as possible. Shoot the fire extinguisher through louvers, the radiator grille or from the underside of the vehicle.
If you have a cargo fire in a van or box trailer, keep the doors shut, especially if your cargo contains hazardous materials. Opening the doors will supply the fire with oxygen and will cause it to burn very fast.

**Use the right fire extinguisher:** By regulation, BC extinguishers are required on commercial vehicles, A, B, C are an acceptable alternate. **B,C type extinguishers** work on electrical fires and burning liquids. Don't use water on electrical or gasoline fires.

**A,B,C type extinguishers** work on burning wood, paper and cloth as well as burning liquid and electrical fires.

**Water** can be used on wood, paper, cloth and burning tires. Don't use water on an electrical fire (you could get shocked) or on a fire involving petroleum products. If you're not sure what to use, especially if you have a hazardous material fire, wait for qualified fire fighters.

**Extinguish the fire** only if you know what you are doing and it is safe to do so.

- When using the extinguisher, stay as far away from the fire as possible.
- Aim at the source or base of the fire, not up in the flames.
- Position yourself upwind. Let the wind carry the extinguisher to the fire instead of carrying the flames to you.
- Be sure you have a path of retreat if you are unable to control the fire.
- Continue until whatever was burning has cooled. If you don't see any smoke or flames, don't assume that the fire is out. It could be smoldering and it could restart.

**Hazardous Materials**
**Rules for All Commercial Drivers**

All drivers should know something about hazardous materials. You must be able to recognize hazardous cargo and you must know if you can haul it without having a hazardous materials endorsement on your commercial driver's license.

**Hazardous materials are products that pose a risk to health, safety and property during transportation.**

You must follow the rules for transporting hazardous materials. These rules ensure safe drivers and equipment. They also tell you how to contain the product and how to communicate its risk.

Definition: Placards are diamond-shaped signs put on the outside of a vehicle to warn others. They identify the hazard class of the cargo.

The table below lists 9 hazard classes.
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<td>Combustible Liquids</td>
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To Ensure Safe Drivers and Equipment
Drivers of placarded vehicles must have a commercial driver's license with the hazardous materials endorsement. Drivers must learn how to safely load and transport hazardous products. To get the endorsement, you must pass a written test on the Hazardous Materials Endorsement Section of this manual. If you transport hazardous products in a cargo tank with a gross vehicle weight rating of 26,000 pounds or more, you will also need a tank endorsement.

Never drive a vehicle that needs placards unless you have a hazardous materials endorsement.
Transporting hazardous materials without the proper placards is a crime. You will be stopped and cited and you will not be allowed to drive your truck further. It will cost you time and money. Driving without the proper placards could also risk your life and the lives of others. If you have a crash, emergency workers will not know about your hazardous cargo.
Hazardous materials drivers must also know which products they can load together. Hazardous Materials Endorsement Section of this manual covers these regulations. Before loading a truck with more than one type of product, you must know if it is safe. If you do not know, ask your employer.

To Contain the Product
Many hazardous products can injure or kill on contact. Federal regulations tell shippers how to package safely. This protects drivers and others from contact with the hazardous materials. Other regulations tell drivers how to load, transport and unload bulk tanks. These are called containment rules.

To Communicate the Risk
The shipper uses a shipping paper and package labels and markings to warn dock workers and drivers of the presence of hazardous materials, the hazard class and the specific hazardous material.

The shipping paper describes the hazardous material being transported. Shipping orders, bills of lading and manifests are examples of shipping papers.
Shipping labels are four-inch, diamond-shaped warning labels and are placed on hazardous materials packages. These labels inform others of the hazard. If the diamond label won't fit on the container, shippers put the label on a tag. For example, compressed gas cylinders that will not hold a label will have tags or decals. After an accident or hazardous material spill or leak, you may be injured and unable to tell others about your hazardous cargo. Fire fighters and police can prevent or reduce the amount of damage and injury if they know what hazardous materials you are carrying. Your life and the lives of others could depend on quickly locating hazardous materials shipping papers. For this reason, you must tab shipping papers related to hazardous materials or keep them on top of other shipping papers.

You must keep shipping papers:
• In a pouch on the driver's door, or
• In clear view and within reach while driving, or
• On the driver's seat when you are out of the vehicle.
Placards are 10 ¾ inches on each side and are diamond-shaped. Cargo tanks and other bulk packaging display the I.D. number of their contents on placards or orange panels. A placarded vehicle must have at least 4 identical placards. They are placed on the front, rear and both sides of the vehicle. Not all vehicles that carry hazardous materials need placards. The regulations about placards are given in Hazardous Materials Endorsement Section of this driver's manual. You can drive a vehicle carrying hazardous materials if it does not require placards. If it requires placards, you may not drive it unless you have a hazardous material endorsement on your commercial driver's license.

Transporting Cargo
This section tells you about hauling cargo safely. You must understand basic cargo safety rules to get a CDL.

Cargo that is loaded wrong or that is not secured is a danger to others and you. Loose cargo can:
- Fall from the vehicle and cause a crash
- Hurt or kill you if you stop quickly or crash
- Make it difficult for you to steer the vehicle

Additionally, loose cargo can be damaged by sliding back and forth and can damage the vehicle. You may load and secure the cargo yourself or someone else may load and secure it. In either case, you must:
- Inspect the cargo, unless it is a sealed load or the manner of handling makes inspection impractical.
- Recognize overloads and poorly balanced weight.
- Ensure that the cargo is properly secured.

Cargo Weight and Balance - Definitions of Weight:
Gross vehicle weight (GVW) The total weight of a single vehicle plus the cargo.

Gross combination weight (GCW) The total weight of a powered unit (tractor) plus the trailer or trailers plus the cargo.

Gross vehicle weight rating (GVWR) The maximum GVW specified by the manufacturer for a single vehicle plus the cargo (maximum scale weight).

Axle weight The weight transferred to the ground by one axle or one set of axles.

Legal Weight Limits
You must keep weights within the legal limits. States have maximum GVWs, GCWs and axle weights. Often, maximum axle weights are set by a formula. This bridge formula governs gross weight independently of axle weight. This helps prevent overloading bridges and roadways. You'll find the maximum weights on the shipping bill.

Overloading Affects Safety
Overloading a vehicle can also affect steering, braking and speed control. Overloaded trucks may gain too much speed on downgrades and the stopping distance increases.
If you are driving in bad weather or in the mountains, it may not be safe to drive at the legal maximum weights. Consider this before you drive.

**Don't Be Top Heavy**
Your vehicle’s center of gravity affects safe handling. If cargo is piled high or if heavy cargo is loaded on top, the center of gravity will be high. Your vehicle will be more likely to tip over. A high center of gravity is most dangerous on curves or if you swerve to miss a hazard. Cargo that is piled high can also shift to the side or fall off. Distribute your cargo so that it is as low as possible. Load the heaviest parts of the cargo on the bottom.

**Balance the Weight**
Weight that is poorly balanced will make vehicle handling unsafe. Too much weight on the steering axle will make it difficult to steer. It can also damage the steering axle and tires. Shifting the weight to the back of the vehicle can make the steering axle weight too light. This makes steering unsafe. Too little weight on the driving axles can cause poor traction. Drive wheels may spin. During bad weather the truck may not be able to keep going.

**Securing Cargo**
**Blocking** is used in the front, back and on the sides of a piece of cargo to keep it from sliding. Blocking is shaped to fit snugly against the cargo. It is secured to the cargo deck to keep the cargo from moving.

**Bracing** also prevents cargo movement. Bracing goes from the floor to the upper part of the cargo. It can also go to the walls of the cargo compartment.

**Cargo tie downs** are used on flatbed trailers without sides. The tie downs keep the cargo from shifting or falling off the vehicle. In closed vans, tie downs keep the cargo from shifting.
- You must use the correct type of tie downs and correct strength tie downs. The combined strength of all cargo tie downs must be strong enough to lift 1 ½ times the weight of the cargo that is tied down. You chains and tensioning devices (winches, ratchets and clinching components). You must attach the tie downs to the vehicle correctly using hooks, bolts, rails and rings.
- Cargo should have at least one tie down for each 10 linear feet of cargo. No matter how small the cargo, you should use at least two tie downs to hold it.
- There are special requirements for securing various heavy pieces of metal. Find out what they are if you plan to carry these materials. You find this information in the Code of Federal Regulations.

**Header boards** or headache racks protect you from your cargo if you crash or make an emergency stop. Make sure that the header board structure is in good condition. The structure should block the forward movement of any cargo that you are carrying.

**Cargo covers** protect other people from spilled cargo and protect the cargo from the weather. Many states require cargo covers for spill protection. Be familiar with the cargo cover laws in the states where you drive. Use your mirrors to check the cargo covers.
while you are driving. A flapping cover can tear loose, uncovering the cargo and blocking your view or someone else’s view.

Sealed and containerized loads are generally used for freight that is carried part way by rail or ship. Some containers have their own tie down devices or locks that attach directly to a special frame. Others must be loaded onto flat bed trailers. These containers must be properly secured just like any other cargo.

Other Cargo

**Other Cargo Requiring Special Care**

**hanging meat** in a refrigerated truck is a very unstable load with a high center of gravity. Be very careful when driving on sharp curves, such as ramps and exit ramps. Drive slowly.

**Livestock** can move around in a trailer causing a shift in weight and balance. If you are carrying less than a full load, use false bulkheads to keep the livestock bunched together. Even when bunched together, live stock may lean on curves. This shifts the center of gravity and makes rollover more likely.

**Over-length, over-width and/or over-weight loads** require special transit permits. These permits are issued by the Department of Transportation Hauling Permits Section. Driving is usually limited to certain time. Special equipment may be necessary, such as signs, flashing lights, flags, etc. Over-sized loads may require a police escort or pilot vehicles with warning signs and flashing lights.

**Dry bulk tanks** require special care because they often have a high center of gravity which can cause the load to shift or the trailer to flip over. Be careful when driving around curves and making sharp turns.

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<th><strong>Maximum Speed Limits for Commercial Motor Vehicles</strong></th>
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1. A School bus may travel 45 mph when not loading or unloading passengers between its starting point and its destination. However, during the loading and unloading of students—from the first pick-up/drop-off to the last pick-up/drop-off—the maximum speed is 35 mph. A School bus may travel 55 mph on an interstate other loaded or unloading.

2. Speed limit is 45 mph on secondary roads which include all public roads and streets providing principally local services not designated as part of the interstate or primary system. This excludes those roads maintained by several counties and incorporated towns and cities with populations over 3,500.
Introduction

This study guide contains one hundred ninety one commercial drivers license general knowledge test questions and answers. These questions and answers were written by professional authors with extensive knowledge and experience in the transportation industry. This study guide was designed to help drivers pass the commercial drivers license general knowledge exam. The questions pertained in this study guide are not the actual questions that will appear on the commercial drivers license exam. It is unlawful to distribute the actual test questions found on the commercial drivers license exam.

For questions, comments or to order additional books, contact us online at www.CDLTest-Answers.com

For Bonus Test Questions and Answers: please visit our bonus section online at www.CDLTest-Answers.com/bonus-cdl-test-answers.html
General Knowledge – Practice Test Questions

1) What is the most important reason for doing a vehicle inspection?
   A. State law requires vehicle inspections
   B. Safety is the most important reason to inspect your vehicle
   C. To make sure your lights are working properly
   D. To check for over inflated tires

2) What things should you check during a trip?
   A. Watch for pedestrians crossing
   B. Check brake fluid level
   C. Watch gauges for signs of trouble
   D. Make sure your signals are working properly

3) Name some key steering parts.
   A. Tires, rims, lug nuts
   B. Leaf springs, bellows, eye bolt
   C. Axle, control arm, pressure plate
   D. Spindle, tie rod, drag link

4) Name a suspension system defect.
   A. Leaking shock absorbers
   B. Under inflated tires
   C. Loose lug nuts
   D. Cracked brake cylinder

5) What 3 kinds of emergency equipment should you have?
   A. Flash light, tire gauge, tire inflation foam
   B. First aid kit, bandage gauze, pain reliever
   C. Fire extinguisher, spare electrical fuses, warning device
   D. Exterior hazard light, cell phone, wheel chock

6) What is the minimum tread depth for front tires?
   A. 4/32 inch
   B. 2/32 inch
   C. 7/16 inch
   D. 3/8 inch

7) What is the minimum tread depth for other tires?
   A. 4/32 inch
   B. 2/32 inch
   C. 7/16 inch
   D. 3/8 inch

8) Name some things you should check on the front of your vehicle during the walk around inspection?
   A. Fuel tank, engine, tires
   B. Brakes, air lines, suspension
   C. Signal and clearance lights, headlights
   D. Cab area, coupling system, rims
9) What should wheel bearing seals be checked for?
A. Tightness
B. Leaking
C. Fluid level
D. Safety

10) How many reflective triangles should you carry?
A. 2
B. 4
C. 1
D. 3

11) Why should you back toward the driver’s side?
A. State law requires backing toward the driver’s side
B. Because it takes less time
C. Because you can see better
D. So you won’t have to look over your passenger

12) What is a pull-up?
A. Re-positioning of your vehicle when backing
B. A replacement for backing
C. Short forward movement to save brake wear
D. A Diaper

13) If stopped on a hill, how can you start moving without rolling back?
A. Place wheel chock under front wheel
B. Place wheel chock under rear wheel
C. Partly engage clutch before taking your foot off the brake
D. Use your parking brake

14) When backing, why is it important to use a helper?
A. To help avoid blind spots
B. To watch for obstacles
C. To free the passenger side mirror
D. So you will not have to do all of the work

15) What’s the most important hand signal that you and the helper should agree on?
A. Pull up
B. Back up
C. Go
D. Stop

16) What are the 2 special conditions where you should downshift?
A. Before stopping and exiting a curve
B. Before starting off and driving uphill
C. Before shutting engine off and before exiting vehicle
D. Before starting down a hill and before entering a curve

17) When should you downshift automatic transmissions?
A. Before starting downgrade
18) Retarders keep you from skidding when the road is slippery. True or False?
A. True
B. False

19) What are the 2 ways to know when to shift?
A. Engine sound, engine temperature
B. Engine speed, road speed
C. Eight seconds after leaving previous gear, clutch loosens
D. Clutch tightens, rpms drop

20) How far ahead should you look when driving?
A. 10 to 12 seconds
B. 8-10 seconds
C. 12 to 15 seconds
D. 15-17 seconds

21) What are the 2 main things to look for ahead?
A. Traffic and road conditions
B. Vehicles and stoplights
C. Disabled vehicles and obstacles
D. Curves and potholes

22) What's your most important way to see the sides and rear?
A. Use your helper
B. Use your mirrors
C. Use your signals
D. Use your horn

23) What does "communicating" mean in safe driving?
A. Using cell phones
B. Braking often
C. Using your horn
D. Signaling your intentions

24) Where should your reflectors be placed when stopped on a divided highway?
A. 50'/50'/50'
B. 100'/50'/50'
C. 10'/100'/100'
D. 100'/100'/10'

25) What 3 things add up to total stopping distance?
A. Stopping distance/ reaction distance/ perception distance
B. Vehicle distance/ stopping distance/ reaction distance
C. Braking distance/ obstacle distance/ stopping distance
D. Perception distance/ reaction distance/ braking distance

26) If you go twice as fast, your stopping distance will increase by twice or 4 times?
27) Empty trucks have the best braking. True or False?
A. True
B. False

28) What is "hydroplaning"?
A. Tires lose contact with road and have no traction
B. Turning steering wheel but vehicle doesn’t turn
C. Braking but vehicle doesn’t stop
D. Form of surfing

29) What is "black ice"?
A. Very hot slippery tar
B. Oil slick on the roadway
C. Snow on the roadway
D. Thin sheet of clear ice on roadway

30) You should use low beams whenever you can. True or False?
A. True
B. False

31) What should you do before you drive if you are drowsy?
A. Eat
B. Sleep
C. Drink coffee
D. Exercise

32) What effects can wet brakes cause?
A. Slower stopping speed
B. Hydroplaning
C. Brake wear
D. Lack of braking power

33) You should let air out of hot tires so the pressure goes back to normal. True or False?
A. True
B. False

34) You can safely remove the radiator cap as long as the engine isn't overheated. True or False?
A. True
B. False

35) What factors determine your selection of a "safe" speed when going down a long, steep downgrade?
A. Speed/ space/ distance / perception
B. Reaction time/ distance/ speed/ vehicle size
C. Weight of vehicle/ length of grade/ steepness/ road conditions/ weather
D. Perception/ reaction/ speed of vehicle/ stopping distance
36) Why should you be in proper gear before starting down a hill?
A. So you can focus on braking
B. You may not be able to shift back into any gear and all braking effect will be lost
C. To maintain speed
D. So you will not damage the transmission

37) Describe the proper braking technique when going down a long, steep downgrade.

38) What is a "hazard"?
A. Any road condition or user that is a possible danger
B. Any obstacle in the roadway
C. Anything that obstructs the roadway
D. A game of chance

39) Why make emergency plans when you see a hazard?
A. So you won’t hurt your vehicle or anyone else
B. So you will have more time to act
C. So you won’t have to make plans afterward
D. To avoid hitting something

40) Stopping is not always the safest thing to do in an emergency. True or False?
A. True
B. False

41) What is an advantage of going right instead of left around an obstacle?
A. You will avoid skidding
B. You will avoid hydroplaning
C. You will avoid drivers passing on the left
D. You will avoid a head on collision

42) What is an "escape ramp"?
A. A highway exit in case you can’t change lanes
B. Any highway exit
C. An extra lane to pass slower traffic
D. An exit at the bottom of a hill to slow you down and stop

43) If a tire blows out, you should put the brakes on hard to stop quickly. True or False?
A. True
B. False

44) What is one thing to do at an accident scene to prevent another accident?
A. Stop your vehicle immediately no matter which lane you are in
B. Stand in the middle of the lane and wave to oncoming traffic
C. Call your boss
D. Put out flares

45) Name 2 causes of tire fires?
A. Speed and excessive braking
B. Over inflated tires and turning sharply
C. Weight of vehicle and road conditions
D. Under inflated tires and duals that touch
46) What kind of fire is a B:C extinguisher good for?
A. Electrical, fuel
B. Meat, cheese
C. Wood, paper, cloth
D. Metal, rubber

47) When using your extinguisher, should you get as close as possible to the fire?
A. Yes
B. No

48) Name a cause of vehicle fires.
A. Flammable cargo
B. Sudden stopping
C. Overheating
D. Excessive road temperature

49) For what 3 things related to cargo are drivers responsible?
A. Size of cargo, where cargo is placed, and unbalanced cargo
B. Inspection of cargo, balanced weight of cargo, secured cargo

50) How often while on the road must you stop to inspect your cargo?
A. Every 3 hours or 150 miles
B. Every 6 hours or 300 miles
C. Before and after your trip

51) What is the "gross combination weight" (GVW)?
A. Weight of cargo, plus weight of drivers and passengers
B. The maximum weight specified by the manufacturer that a vehicle can hold
C. Weight of trailer plus weight of cargo
D. Weight of power unit, plus trailer, plus cargo

52) Name a situation where legal maximum weight may not be safe.
A. Mountain traveling
B. Crossing bridges
C. Overloading
D. Transporting hazardous materials

53) What can happen if you don't have enough weight on the front axle?
A. Your front end will hydroplane
B. Can cause poor traction
C. Will cause "fishtailing"
D. Will damage shock absorbers

54) What is the minimum number of tie downs for a 20 foot load?
A. At least one tie down for every 20 feet
B. At least two tie downs for every 10 feet
C. At least one tie down for every 5 feet
D. At least one tie down for every 10 feet

55) What is the minimum number of tie downs for any flatbed load?
A. 1
56) Name 1 basic reason for covering cargo on an open road.
A. Protect cargo from theft
B. Insurance requirements
C. Protect the cargo from weather
D. State law requirements

57) What must you check before transporting a sealed load?
A. Cargo is secured inside container
B. Container is locked
C. Check that you don’t exceed height restrictions
D. Check that you don’t exceed weight restrictions

58) Stab braking should not be used on vehicles:
A. Equipped with air brakes
B. Hauling hazardous materials
C. Towing trailers
D. Equipped with anti-lock brakes

59) What should you always do when traveling down a long downgrade?
A. Apply brakes when your vehicle exceeds the safe speed by 5 mph
B. Use stab braking
C. Use the braking effect of the engine
D. Apply trailer brakes

60) Bridge formulas are designed to:
A. Permit less maximum axle weight for axles that are farther apart
B. Permit less maximum axle weight for axles that are closer together
C. Permit same maximum axle weight for any axle spacing
D. Same formula used to total the GVWR

61) Which statement is true?
A. You can always trust other drivers to turn in the direction they are signaling
B. Drivers with rental trucks are often not used to driving a large vehicle and may be more dangerous

62) The first offense for driving a commercial vehicle under the influence of drugs or alcohol will cause you to lose your CDL for:
A. 6 months
B. 2 years
C. 1 year
D. 3 years

63) Your vehicle will be placed "out of service" if this many leaves are broken or missing?
A. Any at all
B. One third of total number
C. One half of total number
D. One fourth of total number
64) Can your truck or bus be inspected by federal inspectors?
A. Yes
B. Only to the point of entry
C. Yes, but cannot place you out of service
D. Yes, and can also place you out of service

65) Can I use over-the-counter medication when operating a CMV?
A. Yes, but only take half a dose
B. Should not be used because it can make you sleepy
C. Yes, but only during daylight hours
D. As long as the dispatcher say’s it is ok.

66) Which of these statements is True?
A. You should use your high beams from 7 pm til 7 am
B. Most drivers are more alert at night than during the day
C. Many accidents occur between 12 am and 6 am
D. Hazards are easier to see at night

67) Which statement is True about rear drive-wheel braking skids?
A. When pulling a trailer, the trailer can push the towing vehicle sideways.
B. The locked wheels have more traction than the ones that are rolling.
C. It is not a cause of jackknifing.
D. The vehicles front wheels will slide sideways.

68) Which of these can you NOT check at the same time?
A. Clearance lights and 4 way flashers
B. Taillights and clearance lights
C. Headlights and clearance lights
D. Brake lights, 4 way flashers and turn signal

69) Which of the following will occur after you start your engine?
A. Manifold exhaust indicator gauge will rise to 190 degrees.
B. The water temperature gauge will rise to normal operating temp.
C. In 10-15 minutes the air pressure gauge will rise to normal.
D. In 4-5 minutes the oil pressure gauge will rise to normal.

70) If your vehicle is 40 feet long and you are traveling 50 mph, what is the safe following distance?
A. 3 seconds
B. 4 seconds
C. 7 seconds
D. 5 seconds

71) You can be placed out of service if your Blood Alcohol Concentration is:
A. 1.0% or higher
B. Any amount detectable
C. .03% or higher
D. .04% or higher

72) What should you do when you see a hazard in the road in front of you?
A. Turn on your 4 way flashers to warn other drivers
B. Stop in the roadway, set out triangles and go to the back of your vehicle to flag down drivers
C. Stop quickly and exit the roadway if possible
D. Steer and counter-steer around the hazard

73) Why should you conduct a pre-trip inspection?
A. To see if you can add more freight to your load
B. To make sure the vehicle is safe to operate
C. To avoid being placed out of service
D. To add time to your logbook

74) What happens when a tire blows out at highway speed?
A. The low air pressure alarm will come on
B. You will hear a loud hissing sound coming from your tire
C. You will feel a vibration
D. There will be an immediate drop in speed

75) Which of these statements is True about tire pressure?
A. You should reduce air pressure in warmer weather
B. You do not have to check the air pressure in a pre-trip inspection
C. The air pressure in the tire increases when the temperature rises
D. All of the above

76) You should use your horn:
A. When changing lanes
B. To help you avoid a collision
C. When a car gets in your way
D. To make a deer move away from the roadside

77) Convex mirrors will:
A. Show a wider view than flat mirrors
B. Make objects appear closer than they actually are
C. Make objects appear smaller than they actually are
D. Make objects appear larger than they actually are

78) What type of fire will water extinguish?
A. Tire
B. Gasoline
C. Diesel
D. Electrical

79) If you are traveling down a long grade and your brakes start to get weak, you should:
A. Pump the brake pedal
B. Downshift and continue
C. Stop as quickly as possible
D. Continue to the bottom, then stop and check the brakes

80) Why is it important to shift gears properly?
A. To keep the engine at the proper temperature
B. To keep the radiator cool
C. To keep the oil flowing through the crankcase
D. To help maintain control of the vehicle
81) When starting off on dry, level pavement, it is normally not necessary to:
A. Press on the gas pedal and pop out the clutch
B. Apply the parking brake
C. Both A and B

82) With low-beam headlights on, you can see
A. 250 feet ahead
B. 200 feet ahead
C. 150 feet ahead
D. 300 feet ahead

83) Which of these conditions can produce a skid?
A. Over steering
B. Over braking
C. Driving too fast
D. All of the above

84) What should you do if you are being tailgated?
A. Slam on your brakes
B. Turn on your 4 way flashers
C. Increase following distance
D. Motion for the driver to pass

85) When should you use controlled braking?
A. If the vehicle is equipped with anti-lock braking
B. Only use with hydraulic brakes
C. You need to stop quickly
D. To keep the vehicle in a straight line when braking

86) Which of the following is True when driving in cold weather?
A. Use anti-freeze in your windshield washer fluid
B. Use bleach on your tires to increase traction
C. If the temp is below freezing, the engine will not freeze
D. Exhaust leaks are not a concern

87) When drinking alcohol, which is affected first?
A. Judgment and self control
B. Kidney control
C. Coordination
D. Muscle control

88) When backing to a dock, which of the following is NOT True?
A. Always back toward the drivers side if possible
B. Use a helper and hand signals
C. Back slowly until you bump the dock

89) What is controlled braking?
A. Used if the vehicle does not have anti-lock brakes
B. Applying brake firmly, but not enough to lock up
C. Applying brake to lock up, then releasing and reapplying
D. Applying brake to lock the wheels up
90) **What should you do when traveling through a construction zone?**
A. Only reduce speed if you see a worker near the road  
B. Watch for holes in the road and drop offs  
C. Stop before entering, then proceed in low gear  
D. Go as quickly as possible to avoid congestion

91) **When your brakes are wet, it is very easy to:**
A. Hydroplane if traveling faster than 30 mph  
B. Hydroplane  
C. Overheat your brakes  
D. Jackknife the trailer

92) **If you are stopped on the shoulder of the road on a divided highway, you must:**
A. Place reflective triangles or flares within 10 minutes of stopping  
B. Flag down the next passing motorist and request assistance  
C. Wait for road-side assistance  
D. Turn off your vehicle

93) **The maximum speed limit for a school bus on a highway is:**
A. 50 mph  
B. 55 mph  
C. 45 mph  
D. 65 mph

94) **When conducting a pre-trip inspection of the steering system, you would not inspect:**
A. Missing nuts, bolts or other parts on the steering box  
B. Leaking shock absorbers  
C. Power steering hoses, pumps and fluid level  
D. Power steering fluid leaks

95) **Before entering a curve, you should:**
A. Slow down to a safe speed and downshift before entering the curve  
B. Up-shift and accelerate before entering the curve  
C. Come to a stop before entering the curve

96) **You must come to a full stop at railroad crossings:**
A. Always  
B. When carrying passengers or hazardous cargo  
C. At night  
D. If the crossing is unmarked

97) **You may not drive for more than ____ hours following your last period of 8 consecutive hours off duty.**
A. 6  
B. 8  
C. 10  
D. 12

98) **About ____ of all fatal crashes involve drinking drivers.**
A. One-third  
B. One-half
C. One-quarter
D. Two-thirds

99) When you double your speed, it takes ____ times as much distance to stop your vehicle.
A. 3
B. 2
C. 4
D. 5

100) "Offtracking" is:
A. Driving on a dirt road
B. Passing on the right
C. Pulling onto the shoulder of the road
D. Trailer wheels following a different path than the tractor wheels

101) How far ahead should a driver be looking while driving a vehicle?
   a. 1/8 mile.
   b. 1/4 mile.
   c. 1/2 mile.
   d. 3/4 mile.

102) You are driving a heavy vehicle and must exit the highway using an off ramp that curves downhill. You should:
   a. use the posted speed limit for the ramp.
   b. slow down to a safe speed before the ramp.
   c. wait until you are in the curve before you start to downshift.
   d. shift to a higher gear before the turn.

103) Which of these statements are true about downshifting?
   a. When you downshift for a curve, you should do so before you enter the curve.
   b. When you downshift for a hill, you should do so after you start down the grade.
   c. When you downshift for a curve, you should do so after you enter the curve.
   d. When you downshift for a curve, do so just after the curve.

104) Which fires can you put out with water?
   a. tire fires.
   b. fuel fires.
   c. electrical fires.
   d. chemical fires.

105) Which of these statements about backing a heavy vehicle is true.
   a. never get out and look before backing.
   b. You should avoid backing whenever you can.
   c. When you use a helper, he/she should use clear voice signals
   d. it is safer to back to the right side of the vehicle than it is to the drivers side.

6. The key point in balancing cargo weight is to keep the load.
   a. to the front.
   b. to the rear.
c. centered.
d. low to the floor.

107) In normal driving some drivers use the hand valve before the brake pedal to prevent a jackknife. Which of these statements are true?
   a. This should not be done.
   b. This results in less skidding.
   c. Lets driver steer with both hands.
   d. Best way to brake in a straight line.

108) There are two things a driver can do to prevent a roll over, the first, keep the cargo as close to the floor as possible and what is the other?
   a. make sure the brakes are adjusted.
   b. keep both hands firmly on the wheel.
   c. go slow around turns.
   d. keep 5th wheel free play tight.

109) Brakes can get wet when you drive through a heavy rain. Wet brakes can cause?
   a. wheel lockup.
   b. trailer jackknife.
   c. pulling to one side.
   d. all the above.

110) You are checking your steering and exhaust systems during a pre-trip inspection. Which of these statements is true?
   a. Steering wheel play of more than 10 degrees (2 inches on a 20-inch steering wheel) can make it hard to steer.
   b. Leaks in the exhaust system are not a problem if they are outside of the cab.
   c. Some leakage of power steering fluid is normal.
   d. if you find a leak in the exhaust system, drive with the window open.

111) Your vehicle is in a traffic emergency and may collide with another vehicle if you do not take action.
   a. You can almost always turn to miss an obstacle more quickly than you can stop.
   b. Stopping is always the safest action in a traffic emergency.
   c. Leaving the road is always more risky than hitting another vehicle.
   d. Unbuckle your seat belt before impact so you will not be trapped inside your vehicle.

112) Which of these is a good rule to follow when driving at night?
   a. Always use your high beams at night.
   b. Look directly at the oncoming headlights.
   c. Keep your speed slow enough to stop within the range of your headlights.
   d. Keep your instrument lights bright.

113) Which of these statements are true about brakes?
   a. The heavier a vehicle or the faster it is moving, the more heat the brakes have to absorb to stop it.
   b. Brakes have more stopping power when they get very hot.
   c. When going down hill, heavy use of the brakes is recommended.
   d. Brake drums cool very quickly.
114) Which of these is the most important thing to remember about emergency brakes?
   a. Disconnecting the steering axle brakes will keep the vehicle in a straight line.
   b. To keep the rear wheels from skidding, brake hard.
   c. Never do it without downshifting first.
   d. If the wheels are skidding, you cannot control the vehicle.

115) How do you test hydraulic brakes for leaks?
   a. Hydraulic brakes can not leak, so there is no need to test them.
   b. Move the vehicle slowly and see if it stops when the brakes are applied.
   c. With vehicle stopped, pump the pedal three times, apply firm pressure, hold for five seconds and see if the pedal moves.
   d. Step on the brake pedal and the accelerator at the same time and see if the vehicle moves.

116) You do not have a hazardous materials endorsement on your commercial driver license. When can you legally haul hazardous materials?
   a. When the load does not require placards.
   b. When the gvwr is 26,001 lbs or more.
   c. When the shipment will not cross State lines.
   d. When a person who has the hazardous materials endorsement rides in the vehicle.

117) You are checking your wheels and rims during a pre-trip inspection. Which of these statements is true?
   a. Rust around wheel nuts may mean they are loose.
   b. Cracked wheels or rims can be used if they have been welded.
   c. Missing, bent or broken studs are not a safety hazard.
   d. Mismatched lock rings may be used on the same vehicle.

118) To avoid a crash, you had to drive on the right shoulder. How should you move back onto the pavement?
   a. Come to a complete stop, if possible, before steering back onto the pavement.
   b. Brake hard to slow the vehicle, then steer sharply onto the pavement.
   c. Steer sharply onto the pavement, then brake hard as you counter steer.
   d. Keep moving at the present speed and steer very gently back onto the pavement.

119) If you are being tailgated, you should?
   a. Increase the space in front of your vehicle.
   b. Flash your brake lights.
   c. Speed up.
   d. Signal the tailgater when it is safe to pass.

120) Which of these statements about staying alert to drive is true?
   a. A half hour brake for coffee will do more to keep you alert than a half hour nap.
   b. There are drugs that can over come being tired.
   c. It is not possible to fall asleep while sitting up.
   d. The only thing that can cure fatigue is sleep.

121) Which of these statements about speed management is true?
   a. Empty trucks always stop faster than fully loaded ones.
   b. As the speed of the vehicle doubles, its stopping distance also doubles.
   c. Choose a driving speed that lets you stop in the space that you can see ahead.
   d. Following to closely is not a problem if the driver is alert.
122) How far should a driver look ahead of the vehicle while driving?
   a. 1-2 seconds.
   b. 5-8 seconds.
   c. 12-15 seconds.
   d. 18-21 seconds.

123) You are driving a 40 foot vehicle at 45 mph. Driving conditions are ideal (dry pavement, good visibility). The least amount of space that you should keep in front of your vehicle to be safe is the distance you would travel in:
   a. 2 seconds.
   b. 3 seconds.
   c. 4 seconds.
   d. 5 seconds

124) Which of these statements about drinking alcohol is true?
   a. Some people aren't effected by drinking.
   b. A few beers has the same effect on driving as a few shots of whiskey.
   c. Coffee and fresh air can sober a person up.
   d. If you drink alcohol fast enough, it will effect you less.

125) As the Blood Alcohol Concentration (BAC) goes up, what happens?
   a. The effects of alcohol decreases.
   b. The drinker is always aware of increased effects.
   c. The person is even more dangerous if allowed to drive.
   d. The driver can sober up in less time.

126) Driving under the influence of a drug which makes you drive unsafely is?
   a. Permitted if it is prescribed by a doctor.
   b. Against the law.
   c. Permitted if it is a diet or cold medicine.
   d. Easier if combined with a small amount of alcohol.

127) You wish to turn right from a two-lane street to another two-lane street. Your vehicle is so long that you must swing wide to make the turn. Which of these drawings show how the turn should be made?

128) Some traffic emergencies may require you to leave the road. Which of these is a good thing to remember?
   a. If you must leave the road, try to get all wheels off the pavement.
   b. You should brake hard as you leave the road.
   c. You should avoid braking until your speed has dropped to about 20 mph.
   d. Most shoulders will not hold a large truck.
129) Cargo that can shift should have at least _____ tie-downs?
   a. 1
   b. 2
   c. 3
   d. 4

130) Which of these statements about cargo loading is true?
   a. The legal maximum weight allowed by a state is safe for all driving conditions.
   b. If cargo is loaded by the shipper, the driver is not responsible for overloads.
   c. State regulations dictate legal weight limits.
   d. If the initial inspection is thorough, it is not necessary to check the load on the road.

131) If a straight vehicle goes into a front wheel skid, it will?
   a. Slide sideways and spin out.
   b. Slide sideways somewhat, but not spin out.
   c. Go straight ahead but will turn if you turn the steering wheel.
   d. Go straight ahead even if the steering wheel is turned.

132) The most common cause of serious vehicle skids is?
   a. Driving too fast for road conditions.
   b. Poorly adjusted brakes.
   c. Too much weight on the front axle.
   d. Bad tires.

133) Which of these statements about downshifting is true?
   a. When you downshift for a hill, speed up at the same time.
   b. When you downshift for a curve, you should do so before you enter the curve.
   c. When you downshift for a hill, you should do so after you start down the hill.
   d. When you downshift for a curve, you should do so after you enter the curve.

134) You should avoid driving through deep puddles or flowing water. But if you must, what will keep your brakes working?
   a. Gently pressing the brake pedal while driving through the water.
   b. Applying hard pressure on both the brake pedal and the accelerator after coming out of the water.
   c. Disconnecting the steering axle brakes after coming out of the water.
   d. Decrease engine RPM while crossing the water.

135) Which of these statements about backing a heavy vehicle is true?
   a. If the trailer begins to drift, turn the top of the steering wheel in the opposite direction of the drift.
   b. You should avoid backing whenever you can.
   c. You should use a helper, he/she should use clear voice signals.
   d. It is safer to back a vehicle than to drive forward.

136) High beams should?
   a. Be used whenever it is safe and legal to do so.
   b. Be turn on when an oncoming driver does not dim his/her lights.
   c. Be dimmed when you are within 100 feet of another vehicle.
   d. Be used as sparingly as possible.
137) **Stab Braking** -
   a. Should never be used.
   b. Involves locking the wheels.
   c. Involves steady pressure on the brake pedal.
   d. Will not allow you to turn.

138) **For an average driver driving 55 MPH on dry pavement, it will take about ____ to bring the vehicle to a stop.**
   a. Twice the length of the vehicle.
   b. Half the length of a football field.
   c. The length of a football field.
   d. Sixty feet.

139) **The parking brake should be tested while the vehicle is?**
   a. Parked.
   b. Moving slowly.
   c. Going down hill.
   d. Moving at least 30 MPH.

140) **Controlled braking** -
   a. lock the brakes and release the pedal when you have stopped.
   b. Apply the brakes as hard as you can without locking the brakes.
   c. Apply the brakes as hard as you can until the brakes lockup then release them.
   d. Can never be used on a heavy vehicle.

141) **The vehicle in front of you has a red triangle with an orange center on the rear. What does this mean?**
   a. The vehicle is hauling hazardous materials.
   b. It is a slow moving vehicle.
   c. It has an over sized load.
   d. The vehicle does not pay road use taxes.

142) **You must park on the side of a level, straight, two-lane road. Where should you place the three reflective triangles?**
   a. One within 10 feet of the rear of the vehicle, one about 100 feet to the rear of the vehicle, and one about 100 feet from the front of the vehicle
   b. One within 10 feet of the rear of the vehicle, one about 100 feet to the rear, and one about 200 feet to the rear.
   c. One about 50 feet from the rear of the vehicle, one about 100 feet to the rear of the vehicle and one about 10 feet from the front of the vehicle.
   d. One within 100 feet of the rear of the vehicle, one about 10 feet to the rear and one about 10 feet from the front of the vehicle.

143) **The key principle in balancing cargo weight is to keep the load?**
   a. Centered.
   b. To the front.
   c. To the rear.
   d. None of the above.

144) **When should you check your load?**
a. Before you leave on your trip.
b. At the start of the trip and at your first stop.
c. Before you leave, after the first 25 miles and every 150 miles or 3 hours.
d. After the first 25 miles.

145) If a vehicle is loaded with very little weight on the front axle, what can happen?
   a. Poor traction.
   b. Damage to drive axle tires.
   c. Better handling.
   d. All the above.

146) Cargo inspections
   a. Should be done only before driving.
   b. Should be done at every break during trip.
   c. Are only needed if you are hauling hazardous materials.
   d. Should be done every 6 hours or 300 miles.

147) How do you correct a rear-wheel acceleration skid?
   a. Increase acceleration to the wheels.
   b. Apply the brakes.
   c. Stop accelerating and push in the clutch.
   d. Apply the brakes.

148) Which of these statements about double-clutching and shifting is true?
   a. It should not be done when the road is slippery.
   b. You can use the sound of the engine to tell you when to shift.
   c. You must use both clutch pedals.
   d. All the above.

149) Which of these statements about tires and hot weather driving are true?
   a. You should inspect your tires more often.
   b. If a tire is too hot to touch, you should drive on it to cool it off.
   c. Recapped tires are less likely to fail in hot weather than new tires.
   d. None of the above.

150) What should you do if your vehicle hydroplanes?
   a. Start stab braking.
   b. Downshift immediately.
   c. Accelerate slightly.
   d. Release the accelerator.

151) You must make a very quick stop. You should brake so you:
   a. Can steer hard while braking hard.
   b. Use the full power of the brakes and lock them up.
   c. Stay in a straight line and can steer.
   d. All the above.

152) While driving, you see a small (1 foot square) cardboard box ahead in your lane. You should:
   a. Stop and direct traffic around it.
   b. Hit it with your vehicle to knock it off the road.
c. Steer around it if it is safe to do so.
d. Aim for it with your left steering tire.

153) Which of these statements about overhead clearance is true?
   a. You should assume posted clearances are always correct.
   b. A vehicle's clearance can change with the load carried.
   c. If the road surface causes the vehicle to tilt, you should drive close to the shoulder.
   d. Heavy vehicles can always fit under any clearance.

154) When you are on top of a hill and know you will be going down a steep grade, which statement is true?
   a. Never downshift until you are going down the grade.
   b. Always downshift to a gear lower than you came up the hill before starting down the grade.
   c. Put the vehicle in neutral while going down the grade and use a very heavy pressure on the brake pedal.
   d. Use a steady brake pressure before starting down the grade.

155) You are driving a vehicle with a light load, traffic is moving at 35 MPH in a 55 MPH zone. The safest speed for your vehicle in this situation is most likely:
   a. 30 MPH.
   b. 35 MPH.
   c. 50 MPH.
   d. 25 MPH.

156) What sort of things should you inspect during a trip?
   a. Gauges, exhaust, lights, cargo, and coupling devices.
   b. Gauges, brakes, lights, pumps, and hoses.
   c. C. gauges, brakes, lights, cargo, and coupling devices.
   d. Gauges, tires, shock absorbers, brake shoes and frame members.

157) When should you downshift your vehicle?
   a. Before going down hill.
   b. Before entering a curve.
   c. Going up a hill.
   d. All the above.

158) Which item is a key suspension part?
   a. Tie rod.
   b. Drag link.
   c. Pitman arm.
   d. None of the above.

159) What factors determine a persons blood alcohol content?
   a. How much alcohol you drink.
   b. How fast you drink.
   c. How much you weigh.
   d. All the above.

160) Perception distance is?
   a. The distance traveled from the time your brain tells your feet to move from the accelerator until your foot is actually pushing the brake pedal.
b. The distance traveled from the time your eyes see a hazard until the time your brain recognizes the hazard.
c. The distance it takes to stop once the brakes are applied.
d. The time until perception is reached.
e. None of the above.

161) When driving how far ahead should you be looking?
   a. One football field.
   b. Two football fields.
   c. 5 – 10 seconds.
   d. 12 – 15 seconds.

162) Doubling your speed has what effect on braking distance?
   a. No difference in stopping distance.
   b. Twice the speed = twice the stopping distance.
   c. Twice the speed = four times the stopping distance.
   d. Twice the speed = eight times the stopping distance.

163) Hazardous material placards are:
   a. Placed on the front, rear, and both sides of the vehicle.
   b. 10 and ¾ inches square.
   c. Turned up right on a point, in a diamond shape.
   d. All of the above.

164) Which of these requires the greater stopping distance?
   a. A loaded vehicle.
   b. An empty vehicle.
   c. A partially loaded vehicle.
   d. None of the above.

165) You are convicted of speeding in your personal vehicle and issued a ticket. What are your responsibilities to your employer?
   a. CDL holders must report convictions for traffic violations (except parking violations) to employers with in 72 hours.
   b. CDL holders must report convictions for traffic violations (except parking violations) to employers with in 3 business days.
   c. CDL holders must report convictions for traffic violations (except parking violations) to employers with in 30 business days.
   d. CDL holders must report convictions for all traffic violations including parking violations to employers with in 72 hours

166) Which of the following emergency items are you not required to have available?
   a. Fire extinguisher.
   b. Spare fuses.
   c. First aid kit.
   d. Warning triangles.

167) Under inflated tires can cause a fire.
   a. True.
   b. False.
168) When backing and turning, you should:
   a. Back and turn towards the driver’s side.
   b. Use a helper if possible.
   c. Check your path before you begin backing.
   d. All of the above.

169) Which of the following is a basic step to take after an accident?
   a. Protect the area.
   b. Notify the authorities.
   c. Care for the injured.
   d. All of the above.

170) Which of the following is not a CDL skills examination?
   a. Materials handling test.
   b. Pre-trip vehicle inspection.
   c. Basic control skills test.
   d. On road test.

171) What is the minimum number of tie-downs required for a small load?
   a. 1.
   b. 2.
   c. 3.
   d. 4.

172) How many warning triangles are you required to carry in your vehicle?
   a. 1.
   b. 2.
   c. 3.
   d. 4.

173) The acronym "GVW" means?
   a. Government vehicle weight.
   b. Gross variable weight.
   c. Global vehicle weight.
   d. Gross vehicle weight.

174) When inspecting brakes components you should pay special attention to:
   a. Cracked brake drums.
   b. Brake shoes with oil, grease or fluid on the shoes.
   c. Broken, missing, damaged or heavily worn shoes.
   d. All of the above.

175) Battery fluid is classified as a:
   a. Poison.
   b. Flammable liquid.
   c. Minor fire hazard.
   d. Corrosives.

176) When using a helper to back up, What is the most important hand signal?
   a. Slow down.
   b. Pull forward.
c. Come straight back.
d. Stop.

177) What is the minimum tread depth for a front tire?
a. 2/32 of an inch.
b. 4/32 of an inch.
c. 6/32 of an inch.
d. ¼ of an inch.

178) Your vehicle brakes down on an undivided highway. There are no hills or curves within a mile in either direction. Where should you place the warning triangles?
a. 100 feet in front, 10 feet behind and 100 feet behind the vehicle.
b. 10 feet, 100 feet and 200 feet behind the vehicle.
c. 100 feet in front, 100 feet and 200 feet behind the vehicle.
d. 100 feet, 200 feet and 500 feet behind the vehicle.

179) A fire extinguisher with a C rating is designed for what type of fires?
a. Electrical fires and burning liquids only.
b. On burning wood, paper and cloth.
c. Burning liquids only.
d. All fires regardless of fuel.

180) When transporting cargo, how often should you check your load?
a. Within the first 25 miles of the trip and every 100 miles or every 2 hours afterwards, which ever comes first.
b. Within the first 50 miles of the trip and every 100 miles or every 2 hours afterwards, which ever comes first.
c. Within the first 25 miles of the trip and every 150 miles or every 3 hours afterwards, which ever comes first.
d. Within the first 25 miles of the trip and every 200 miles or every 4 hours afterwards, which ever comes first.

181) You should always aim the fire extinguisher at the top of the flames so that the chemicals will fall on to the fire.
a. True.
b. False.

182) How many classes of hazardous materials are there?
a. 3.
b. 6.
c. 9.
d. 12.

183) When should a driver consider turning off a retarder system on the vehicle?
a. During wet and icy road conditions.
b. When driving through mountainous areas.
c. When roads are clear and dry.
d. Driver are not able to turn off retarder system.

184) When caring for an injured person, you should:
a. Only move them if they are in danger from fire or traffic.
b. Apply direct pressure to any wounds.
c. Keep the injured person warm.
d. All of the above.

185) Should your vehicle catch fire, it is best to pull into a service station because they have plenty of fire fighting equipment?
a. True.
b. False.

186) When loading the cargo compartment of a vehicle it is best to place heavy items on the bottom and the light items on top.
a. True.
b. False.

187) What are the three rules for using your turn signals?
a. 1. Signal when changing lanes, 2. Signal when turning corners. 3. Make sure the signal turns off after the turn is completed.
b. 1. Signal early 2. Signal continuously 3. Make sure the signal turns off after the turn is completed.
c. 1. Signal when changing lanes, 2. Signal when turning corners. 3. Use arm signals only when it's raining.
d. All of the above.

188) Which item is a key steering system part?
a. Torque arm.
b. Pitman arm.
c. Leaf spring.
d. Control arm.

189) Blocking is used to keep the cargo from shifting.
a. True.
b. False.

190) When fighting an engine compartment fire, it is best to lift the hood in order to target the fire's base.
a. True.
b. False.

191) Reaction time or distance is?
a. The distance traveled from the time your brain tells your foot to move from the accelerator to actually pushing on the brake pedal.
b. The distance traveled from the time your eye see a hazard until the time your brain recognizes the hazard.
c. The distance it takes to stop your vehicle.
d. The distance you travel from the time you perceive a hazard until the vehicle comes to a stop.
### Answers – General Knowledge Practice Test

1) **B**  
2) **D**  
3) **A**  
4) **A**  
5) **C**  
6) **B**  
7) **C**  
8) **C**  
9) **B**  
10) **D**  
11) **C**  
12) **B**  
13) **C**  
14) **A**  
15) **D**  
16) **D**  
17) **A**  
18) **B**  
19) **B**  
20) **C**  
21) **A**  
22) **B**  
23) **D**  
24) **C**  
25) **D**  

26) **B**  
27) **B**  
28) **A**  
29) **D**  
30) **B**  
31) **D**  
32) **D**  
33) **B**  
34) **B**  
35) **C**  
36) **B**  
37) **D**  
38) **A**  
39) **B**  
40) **A**  
41) **C**  
42) **D**  
43) **B**  
44) **D**  
45) **D**  
46) **A**  
47) **B**  
48) **A**  
49) **B**  
50) **A**  
51) **D**  
52) **A**  
53) **B**  
54) **D**  
55) **B**  
56) **C**  
57) **D**  
58) **D**  
59) **C**  
60) **B**  
61) **B**  
62) **C**  
63) **D**  
64) **D**  
65) **B**  
66) **C**  
67) **A**  
68) **D**  
69) **B**  
70) **D**  
71) **B**  
72) **A**  
73) **B**  
74) **C**  
75) **C**  
76) **B**  
77) **A**  
78) **A**  
79) **A**  
80) **D**  
81) **C**  
82) **A**  
83) **D**  
84) **C**  
85) **D**  
86) **D**  
87) **C**  
88) **C**  
89) **D**  
90) **B**  
91) **A**  
92) **D**  
101) **B**  
102) **B**  
103) **A**  
104) **A**  
105) **C**  
106) **C**  
107) **A**  
108) **C**  
109) **D**  
110) **A**  
111) **A**  
112) **C**  
113) **A**  
114) **D**  
115) **C**  
116) **A**  
117) **D**  
118) **A**  
119) **A**  
120) **D**  
121) **C**  
122) **C**  
123) **D**  
124) **B**  
125) **D**  
126) **B**  
127) **B**  
128) **C**  
129) **B**  
130) **C**  
131) **D**  
132) **A**  
133) **B**  
134) **A**  
135) **B**  
136) **A**  
137) **B**  
138) **C**  
139) **D**  
140) **B**  
141) **B**  
142) **A**  
143) **A**  
144) **A**  
145) **A**  
146) **B**  
147) **C**  
148) **B**  
149) **B**  
150) **D**  
151) **C**  
152) **C**  
153) **B**  
154) **B**  
155) **B**  
156) **C**  
157) **D**  
158) **D**  
159) **D**  
160) **B**  
161) **D**  
162) **B**  
163) **D**  
164) **B**  
165) **C**  
166) **C**  
167) **A**  
168) **D**  
169) **D**  
170) **A**  
171) **B**  
172) **C**  
173) **D**  
174) **D**  
175) **D**  

37) Apply brakes to 5mph below safe speed. Release and repeat.

* 97) This answer is subject to change

176) **D**  
177) **B**  
178) **A**  
179) **A**  
180) **C**  
181) **B**  
182) **C**  
183) **A**  
184) **D**  
185) **B**  
186) **A**  
187) **B**  
188) **B**  
189) **A**  
190) **B**  
191) **A**
Air Brakes

In This Section
If you plan to drive a truck or bus with air brakes, you need to study this section. If you plan to pull a trailer with air brakes, you must study this section and the section on Combination Vehicles.

Air brakes used **compressed air** to make the brakes work. Air brakes stop large and heavy vehicles safely, but the brakes must be maintained and used correctly.

Air brakes are three different braking systems: service brake, parking brake and emergency brake systems.

1. The **service brake system** applies and releases the brakes when you use the brake pedal during normal driving.
2. The **parking brake system** applies and releases the parking brakes when you use the parking brake control valve (yellow).
3. The **emergency brake system** uses parts of the service and parking brake systems to stop the vehicle if the service brake system fails (red).

Air Brake System Parts
Air compressor pumps air into the air storage tanks (reservoirs). It is connected to the engine through gears or a v-belt. The compressor may be air cooled or cooled by the engine cooling system. It may have its own oil supply or it may be lubricated by engine oil. If the compressor has its own oil supply, check the oil level during the pre-trip inspection.

Air compressor governor controls when the air compressor pumps air into the air storage tanks. When air tank pressure rises to the cut-out level (around 125 pounds per square inch-psi), the governor stops the compressor from pumping air. When the tank pressure falls to the cut-in pressure (around 100 psi), the governor allows the compressor to start pumping again.

Air storage tanks hold compressed air. The number and size of the tanks varies among vehicles. The tanks will hold enough air to allow the brakes to be used several times even if the compressor stops working.

Air tank drains allow you to drain water and compressor oil that may accumulate in the tanks. Water and oil tend to collect in the bottom of the air tank and are bad for the air brake system. The tank must be drained completely to remove all moisture. Otherwise, water can freeze in cold weather and cause brake failure. Each air tank is equipped with a drain valve in the bottom. Be sure to drain the tanks completely. Tanks should be drained daily.
There are two types of drain valves:

1. Manual valves which are operated by turning a quarter turn or by pulling a cable. You must drain the tank yourself at the end of each day of driving.
2. Automatic valves which automatically drain water and oil. They may also be drained manually.

**Alcohol evaporator** puts alcohol into the air system. This helps reduce the risk of ice in air brake valves and other parts during cold weather. Ice inside the system can cause brake failure. Check the alcohol container every day in cold weather and fill it as necessary. You must also drain the air tank every day to get rid of water and oil unless the system has automatic drain valves.

A **safety valve** is installed in the first tank that the air compressor pumps air to. The safety valve protects the tank and the rest of the system from too much pressure. The valve is usually set to open at 150 psi. If the safety valve releases air, something is wrong. Have the system fixed by a mechanic.

**Brake pedal** applies air pressure and puts on the brakes. Pushing the pedal down harder applies more pressure. Letting it up reduces the air pressure and releases the brakes. Releasing the brakes lets compressed air out of the system and reduces air pressure in the tanks. The air pressure must be made up by the air compressor. Pressing and releasing the pedal unnecessarily can let out air faster than the compressor can replace it. If the pressure gets too low, the brakes may lock up.

**Foundation brakes** are used at each wheel. The most common type is the S-cam drum brake. Brake drums are located on each end of the vehicle’s axles. The wheels are bolted to the drums. The braking mechanism is inside the drum. To stop, the brake shoes and linings are pushed against the inside of the drum. This causes friction which slows the vehicle and creates heat. The amount of heat that a drum can take without damage depends on how hard and how long the brakes are used. Too much heat can make the brakes stop working.

**Supply pressure gauges** tell you how much pressure is in the air tanks. These gauges are on all air-braked vehicles.

**Application pressure gauge** shows how much air pressure you are applying to the brakes. This gauge is not on all vehicles. If the application pressure increases when you are holding the same speed, it means that the brakes are fading. Slow down and use a lower gear. The need for increased pressure can also be caused by brakes that are out of adjustment, air leaks or mechanical problems.

**Low air pressure warning** comes on before the air pressure in the tanks falls below 60 psi. This warning signal is required on all vehicles with air brakes. The warning is usually a red light. A buzzer may also come on. Another type of warning is the wig-wag. This device drops a mechanical arm into your view when the pressure in the system drops below 60 psi. An automatic wig-wag will rise out of your view when the pressure goes above 60 psi. On large buses, the low pressure warning signal often comes on at 80-85 psi.
Stop light switch turns on the brake lights when you put on the air brakes. Front brake limiting valves were used in vehicles made before 1975 to reduce the chance of the front wheels skidding on slippery surfaces. Actually, the limiting values reduce the stopping power of the vehicle. The control is usually marked "normal" and "slippery." When you put the control in the slippery position, the limiting valve cuts the air pressure to the front brakes by half. Front wheel braking is good under all conditions. Tests have shown that front wheel skids from braking are not likely even on ice. Make sure the control is in the normal position so that you will have normal stopping power. Many vehicles have automatic front wheel limiting valves. These valves reduce air to the front brakes except when the brakes are put on very hard (60 psi or more application pressure). These valves cannot be controlled by the driver.

Spring brakes are used for emergency and parking brakes. Emergency and parking brakes must be held by a mechanical force because air pressure can leak away. When driving, powerful springs are held back by air pressure. If the air pressure is removed, the springs put on the brakes. A parking brake control in the cab allows the driver to let the air out of the spring brakes. This lets the springs put on the brakes. A leak in the air brake system which causes all air to be lost will also cause the springs to put on the brakes. Tractor and straight truck spring brakes will come on fully when air pressure drops to a range of 20 to 40 psi. Do not wait for the brakes to come on automatically. When the low air pressure warning light and buzzer first come on, bring the vehicle to a safe stop while you can still control the brakes. The braking power of spring brakes depends on the brakes being in adjustment. If the brakes are not adjusted right, the regular brakes and the emergency/parking brakes will not work right.

Parking brake controls In newer vehicles with air brakes, you put on the parking brakes with a diamond-shaped, yellow, push-pull control knob. You pull the knob out to put on the parking brakes (spring brakes) and you push the knob in to release them. On older vehicles, parking brakes may be controlled by a lever.

Never push down the brake pedal when the spring brakes are on. The brakes could be damaged by the combined force of the springs and air pressure.

Modulating control valves may be used to apply the spring brakes gradually. A control handle on the dashboard is spring loaded so you have a feel for the braking action. The more you move the control lever, the harder the brakes come on. This allows you to control the spring brakes if the service brakes fail. When parking a vehicle with a modulating control valve, move the lever as far as it will go and hold it in place with the locking device.

Dual parking control valves. If the main air pressure is lost, the springs brakes come on. Some vehicles, such as buses, have a separate air tank which can be used to release the spring brakes. This allows you to move the vehicle in an emergency. One of the valves is a push-pull type and puts on the spring brakes for parking. The other valve is spring-loaded in the "out" position. When you push the control in, air from the separate air tank releases the spring brakes so you can move. When you release the button, the spring brakes come on again. There is only enough air in the separate tank to do this a few times. So, plan carefully when moving.

Use the parking brakes whenever you park.
Dual Air Brake Systems
Most newer heavy-duty vehicles use dual air brake systems for safety. A dual air brake system has two separate air brake systems which use a single set of controls. Each system has its own air tank, hoses, lines, etc. One system operates the regular brakes on the rear axle or axles. The other system operates the regular brakes on the front axle and possibly one rear axle. Both systems supply air to the trail if there is one. The first system is called the primary system. The other is called the secondary system.

Before driving a vehicle with a dual air system:
- Allow time for the air compressor to build up a minimum of 100 psi pressure in both the primary and secondary systems.
- Watch the primary and secondary air pressure gauges (or needles if the system has two needles in one gauge).
- Pay attention to the low-air warning light and buzzer. The warning light and buzzer should shut off when air pressure in both systems rises to a value set by the manufacturer. This value must be greater than 60 psi.
- The warning light and buzzer should come on before the air pressure drops below 60 psi in either system. If this happens, stop driving right away and park the vehicle.
- If one air system is low on pressure, either the front or rear brakes will not operate fully. This means it will take you longer to stop. Bring the vehicle to a safe stop and have the air brakes system fixed.

Inspecting Air Brake Systems
Inspect your vehicle. However, remember that there are more things to inspect on a vehicle with air brakes than on one without them.

Engine Compartment Check
Check the air compressor drive belt if the compressor is belt driven. Check the condition and tightness of the belt.

Walk-Around Inspection
- Check the manual slack adjusters on the S-Cam brakes – no more than 1 inch travel.
- Park on level ground and chock the wheels.
- Turn off the parking brakes so you can move the slack adjusters.
- Use gloves and pull hard on each slack adjuster that you can reach.
- If a slack adjuster moves more than about one inch where the push rod attaches to it, it probably needs adjustment.
- Adjust it or have it adjusted. Vehicles with too much brake slack can be hard to stop. Out-of-adjustment brakes are the most common problem found in roadside inspections.
- Check the brake drums (or discs), linings and hoses.
- Brake drums or discs cannot have cracks longer than half the width of the friction area.
- Linings (friction material) cannot be loose, soaked with oil or grease. They cannot be dangerously thin.
- Mechanical parts must be in place and should not be broken or missing.
Check the Air Brake System

Air brakes - Seven Step Check
The Seven-Step Air Brake check is designed to test the governor cut-in and cut-out pressures, air pressure leakage, warning buzzer, brake valves and air pressure rebuild rates. Brakes off means the yellow and/or red valve is pushed in (on = valve out).

1. Engine on / Brakes on – check gauges to make sure governor cuts compressor off at 120 psi. Pump brakes until pressure drops below 100 psi to make sure governor cuts compressor on.

2. Engine off / Brakes off – do not touch brakes – watch gauges to make sure pressure does not drop more than 3 psi in one minute.

3. Press and hold brake pedal – watch gauges to make sure pressure does not drop more than 4 psi in one minute.

4. Turn key on / Engine off / Brakes off – pump brake until pressure drops to 60 psi – warning buzzer should sound at or before 60 psi.

5. Continue pumping brakes until reaching 20 to 40 psi – Emergency (red) and Service (yellow) brake valves should pop out turning brakes on.

6. Rebuild air pressure in tank – hold accelerator at 1500 RPM. Watch air gauges and notice that pressure rate of build between 85 psi and 100 psi should not take more than 45 seconds.

7. Perform tug tests. Tug against Parking Brake only. Tug against Emergency Brake only. Tug against Hand Brake only. Test service brake by accelerating to 5mph and pressing brake pedal. If vehicle pulls to one side, this indicates a brake alignment problem.

If there is a problem discovered while testing the Air Brakes, do not drive the vehicle. It is your responsibility to make sure it is repaired by a mechanic. Never operate a vehicle that is unsafe to drive.
Know the parts of an S-cam Air Brake

Using Air Brakes

To Brake Normally
- Push down the brake pedal.
- Control the pressure so that the vehicle comes to a smooth, safe stop.
- If you have a manual transmission, don't push in the clutch until the engine RPM is down close to idle.
- When stopped, select a starting gear.

To Brake in an Emergency
- Brake so that you keep your vehicle in a straight line. This will allow you to turn if it becomes necessary. Use the controlled braking or stab braking method described in the General Knowledge section.

Braking On Downgrades
On a long and steep downgrade, use your brakes only as a supplement to the braking effect of the engine.

- Apply the brakes just hard enough to feel a slowdown.
- When your speed is approximately 5 mph below your safe speed, release the brakes.
- When your speed has increased to your safe speed, repeat steps 1 and 2.
- Repeat these steps until you reach the end of the downgrade.

**Stopping Distance**

Air brakes increase your stopping distance. Hydraulic brakes (used on cars and light/medium trucks) work instantly. Air brakes take half second or more for the air to flow through the lines to the brakes. Thus vehicles with air brakes require more stopping distance than vehicles with hydraulic brakes.

**Stopping distance** for vehicles with air brakes is made up of **four** different factors:

1. **Perception distance** - the distance your vehicle travels from the time your eyes see a hazard until your brain recognizes it.
2. **Reaction distance** - the distance your vehicle travels from the time your brain tells your foot to move from the accelerator until the time your foot pushes the brake.
3. **Brake lag distance** - the distance your vehicle travels from the time your foot pushes the air brake until the brake takes hold.
4. **Braking distance** - the distance your vehicle travels between the time the brakes take hold and the vehicle stops.

The air brake lag distance at 55 mph on dry pavement adds about 32 feet. At 55 mph with good traction and braking conditions, the total stopping distance for a vehicle with air brakes is more than 300 feet. That's longer than a football field.

**Brake Fading or Failure**

Excessive use of the service brakes causes overheating and leads to brake fade. Excessive heat in the brakes causes chemical changes in the lining which reduces friction and causes the brake drums to expand. As the overheated drums expand, the brake shoes and linings have to move farther to contact the drums. The force of contact between the shoes and drums is also reduced. Overuse may increase brake fade until the vehicle cannot be slowed or stopped at all.

Brakes that are out of adjustment may also cause brake fade. To safely control the vehicle, every brake must do its share of the work. Brakes out of adjustment stop doing their share before brakes that are in adjustment. This causes the other brakes to overheat and fade. Brakes can get out of adjustment quickly especially when they are hot. Therefore, brake adjustment must be check frequently.

**Low Air Pressure**

If the low pressure warning comes on, stop and safely park your vehicle **as soon as possible**. You could have an air leak in the system. Controlled braking is possible only while enough air remains in the air tanks. Once air pressure drops between 20 and 40 psi, the spring brakes will come on. A heavily loaded vehicle will take a long distance to stop because the spring brakes do not work on all axles. Lightly loaded vehicles or vehicles on slippery roads may skid out of control when the spring brakes come on.
Therefore, it is much safer to stop while there is enough air in the tanks to use the foot brakes.

**Parking Brakes**
Use the parking brakes any time that you park *except*:
- if the brakes are very hot (from just having come down a steep grade); or,
- if the brakes are very wet in freezing temperatures.

If the brakes are hot, they could be damaged by the heat. Let the brakes cool before using the parking brakes. Use wheel chocks to hold the vehicle.
If the brakes are wet and the temperatures are freezing, they can freeze so that the vehicle cannot move. Use the brakes lightly while driving in a low gear to heat and dry them. Or, use wheel chocks to hold the vehicle.

*Never leave your vehicle unattended without applying the parking brakes or chocking the wheels. The vehicle could roll, causing injury and damage.*
Commercial Drivers License
Air Brakes Test - Practice

Introduction

This study guide contains one hundred ten commercial drivers license air brakes test questions and answers. These questions and answers were written by professional authors with extensive knowledge and experience in the transportation industry. This study guide was designed to help drivers pass the commercial drivers license air brakes endorsement exam. The questions pertained in this study guide are not the actual questions that will appear on the commercial drivers license exam. It is unlawful to distribute the actual test questions found on the commercial drivers license exam.

For questions, comments or to order additional books, contact us online at www.CDLTest-Answers.com

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Air Brakes – Practice Test Questions

1) Why must air tanks be drained?
   a) For pre trip inspection purposes
   b) To check for leaks
   c) To release oil and water buildup
   d) To activate the low air pressure alarm

2) What is a supply pressure gauge used for?
   a) To check tire pressure
   b) To check tank pressure
   c) To activate the low pressure alarm
   d) To check for leaks

3) All vehicles with air brakes must have a low pressure warning signal. True or False?
   a) True
   b) False

4) What are spring brakes?
   a) Hydraulic brakes
   b) Air brakes
   c) Emergency/parking brake
   d) Trailer brakes

5) Front wheel brakes are good under all conditions. True or False?
   a) True
   b) False

6) What is a dual air brake system?
   a) 2 systems which use a single set of brake controls
   b) 2 brake controls that operate from a single system
   c) A system that uses 2 brake controls
   d) A single brake that operates 2 systems

7) What are the slack adjusters?
   a) Adjusts the pressure in the tank
   b) Adjusts the spring brakes
   c) Adjusts the slack in the brake pedal
   d) Adjusts the slack in the brakes

8) How can you test the low pressure warning signal?
   a) Apply parking brake and pump the brake pedal again and again
   b) Push in on the adjuster
   c) Release the parking brake, pull hard on the adjuster
   d) Slam on the brakes traveling 20 mph or over
9) How can you check that the spring brakes come on automatically?
   a) Release parking brake and press the brake pedal again and again
   b) Apply parking brake and press brake pedal again and again
   c) Slam on the brakes while traveling 20 mph or more
   d) Apply and release parking brake again and again

10) What are the maximum leakage rates?
    a) More than 2 psi in one minute
    b) More than 2 psi in two minutes
    c) More than 3 psi in one minute
    d) More than 3 psi in two minutes

11) Why should you be in the proper gear before starting down a hill?
    a) The use of brakes is only a supplement to the braking effect of the engine
    b) So the brakes will not get too hot and start to catch fire
    c) To save wear and tear on the transmission
    d) So you will not pick up too much speed

12) What factor can cause brakes to fade or fail?
    a) Driving in a heavy rain
    b) Excessive use of service brakes
    c) Driving in heavy traffic
    d) Excessive use of emergency brake

13) The use of brakes on a long steep downgrade is only a supplement to the braking effect of the engine. True or False?
    a) True
    b) False

14) If you are away from your vehicle for only a short time, you don't need to use the parking brake. True or False?
    a) True
    b) False

15) How often should you drain air tanks?
    a) At the end of each week
    b) Beginning of each week
    c) At the beginning of each working day
    d) At the end of each working day

16) How do you use the stab braking technique during emergency braking?
    a) Brake hard with the brake pedal and hand valve until stopped
    b) Brake hard with the pedal until the wheels lock, then let off the brakes for as long as the wheels were locked
    c) Brake hard with the pedal until the wheels lock, then let off until the wheels start rolling again
    d) Pump the brake pedal rapidly and lightly

17) When using brakes on a long steep downgrade, which of these is True?
    a) Apply brakes when the vehicle reaches 5 mph over the safe speed, then release when the vehicle slows to safe speed again
    b) Only use the trailer brakes to maintain safe speed
c) Use stab braking
d) Use the engine braking effect, then when the vehicle reaches the safe speed, apply brakes until speed is reduced to about 5 mph below safe speed

18) Why should you NOT fan the brakes on and off during long downgrades?
a) Does not allow brakes to cool
b) The brake linings do not get hot when fanning
c) There is less air usage when fanning
d) None of these

19) If you must make a quick emergency stop, you should:
a) Burn up the hand brake first
b) Stay in a straight line and maintain control
c) Use the full power of the brakes by locking them
d) Steer hard while braking hard

20) A straight truck or bus air brake system cannot leak more than ____ psi per minute with engine off and brakes released.
a) 1
b) 2
c) 3
d) 4

21) A combination vehicle air brake system cannot leak more than _____ psi per minute with engine off and brakes released.
a) 4
b) 3
c) 2
d) 1

22) During normal operations, what are the parking and emergency brakes usually held back by?
a) Bolts/clamps
b) Centrifugal force
c) Spring pressure
d) Air pressure

23) When do you use the parking brake in air brake equipped vehicles?
a) Only during pre-trip and post-trip inspections
b) Every time you park the vehicle
c) As little as possible
d) When slowing down

24) If your truck has dual control valves, you can use pressure from a separate tank to
a) Balance the service brake system while driving
b) Stay parked without using up service air pressure
c) Apply more pressure for stopping if the main tank is getting low
d) Release emergency brakes to move short distances

25) If the air system develops a leak, what will keep the air in the tanks?
a) The one-way check valve
b) The emergency relay valve
c) The tractor protection valve
d) The governor

26) Which of these is normal to find in the air brake system?
a) Water
b) Air
c) Oil
d) All of these

27) What turns on the electrical stop light switch in an air brake system?
a) The driver (by hand)
b) Air pressure
c) Hydraulic pressure
d) Spring pressure

28) If the vehicle is equipped with an alcohol evaporator, what should you do everyday during winter weather?
a) Drain the accumulated alcohol
b) Use 5 weight oil to oil the system
c) Change the alcohol from a new bottle
d) Check and fill the alcohol level

29) If a failure occurs in the service brake system, what system do you need to stop the vehicle?
a) Hand brake system
b) Drum brake system
c) Emergency brake system
d) Parking brake system

30) What determines how effective the spring emergency brakes or the parking brakes work?

a) Braking power increases when the brakes are hot
b) Depends on the adjustment of the service brakes
c) Can only be tested by brake service technicians
d) Has nothing to do with the condition of the service brakes

31) What does the brake pedal do?

a) Exerts force on the slack adjusters by rods and connectors
b) Controls the air pressure to operate the brakes
c) Can be used as a foot rest
d) Is the systems main lever

32) What does the air compressor governor control?

a) When the compressor will pump air into the storage tanks
b) Air pressure applied to brakes
c) Whether the compressor is in good operating condition
d) The rpm's of the air compressor

33) On heavy commercial vehicles, what is the most common type of foundation brake?
34) In manual slack adjusters, how do you check the free play?
   a) Apply the service brakes by hand at the brake chambers and watch for the slack adjusters to move
   b) Park on level ground and drain air pressure before making adjustment
   c) Park on level ground, chock wheels, release parking brake and pull slack adjusters
   d) Stop on level ground and apply emergency brakes

35) What must air brake equipped vehicles have?
   a) An air application gauge to show air used by the brake chambers
   b) An air pressure gauge to show pressure available for braking
   c) A hydraulic braking system, in case the air system fails
   d) At least 3 air tanks

36) The warning device comes on when the air pressure in the service air tank falls below
   a) 80 psi
   b) 60 psi
   c) 50 psi
   d) 40 psi

37) Air loss in a single vehicle (not comb. vehicle) should not be more than _______ with engine off and brakes on.
   a) 3 psi in one minute
   b) 2 psi in 45 seconds
   c) 1 psi in one minute
   d) 1 psi in 30 seconds

38) Three systems are found in modern air brake systems, Service brakes, Parking brakes and:
   a) Drum brakes
   b) S-cam brakes
   c) Foot brakes
   d) Emergency brakes

39) When using parking or emergency brakes, what type of pressure is being used?
   a) Air pressure
   b) Spring pressure
   c) Fluid pressure
   d) None of these

40) Which brake system applies and releases the brakes when the driver uses the brake pedal?
   a) Parking brake system
   b) Service brake system
   c) Emergency brake system
   d) None of these

41) What does the air supply pressure gauge show?
a) How much pressure is being sent to the brake chambers
b) How much pressure is available in the air tanks
c) How much pressure has been used in this trip
d) All of these

42) What does an alcohol evaporator do?
a) Reduce ice in the air brake valve during winter driving
b) Increases tank pressure, the way superchargers boost engines
c) Lets the driver skip the daily tank draining
d) Gets rid of alcohol that condenses in the air tanks

43) What is the purpose of the engine retarders?
a) To prevent skids and slides
b) Applies extra braking power to non-drive axles
c) Helps slow the vehicle and reduce brake wear
d) Provides emergency brakes

44) Which of these statements is True about brakes?
a) Brake drums cool quickly
b) Brakes are more effective when they are hot
c) The heavier the vehicle or the faster the vehicle is going, the more heat the brakes have to absorb to stop it
d) All of these

45) The air loss rate for a straight truck or bus with engine off and brakes applied should not be more than
a) 3 psi in one minute
b) 2 psi in 45 seconds
c) 1 psi in one minute
d) 1 psi in 60 seconds

46) Oil and water usually collect in compressed air tanks. If you do not have an automatic tank drain, when should you drain the air tanks?
a) After every working day
b) After every four hours of service
c) Once a week
d) Every other week

47) Why drain water from the compressed air tanks?
a) Water over cools the compressor
b) The low boiling point of water reduces braking power
c) Water can freeze in cold weather and cause brake failure
d) To keep from fouling the air compressor oil

48) Air brake equipped vehicles must have
a) A backup hydraulic system
b) At least two brake heaters
c) An air use gauge
d) A supply pressure gauge

49) What can legally hold a parking or emergency brake in position for a truck, truck tractor or bus?
a) Spring pressure  
b) Air pressure  
c) Fluid pressure  
d) Any of these  

50) You should know that your brakes are fading when  
a) Less pressure is needed on the brake pedal for each stop  
b) The brake feels spongy when pressure is applied  
c) You have to push harder on the brake pedal to control your speed on a downgrade  
d) Pressure on the brake pedal is released and speed increases  

51) Slack adjusters on s-cam brakes need adjustment if they move more than two inches when the push rod attaches.  
a) True  
b) False  

52) With the engine at operating rpm, the air pressure should build from 85 to 100 psi in 45 seconds in a dual air system.  
a) True  
b) False  

53) Air pressure loss in a combination vehicle should not be more than 1 psi per minute while pressure is on the brake pedal.  
a) True  
b) False  

54) At 55 mph on dry pavement, the air brakes lag distance adds about 32 feet to total stopping distance.  
a) True  
b) False  

55) Air brakes cool very slowly.  
a) True  
b) False  

56) Excessive brake use from speed can cause too much heat to build up in the air brakes.  
a) True  
b) False  

57) If the low pressure alarm comes on you should stop and park your vehicle as soon as possible.  
a) True  
b) False  

58) It is suggested that you drain your air tanks at the end of each week to remove dirt and oil.  
a) True  
b) False  

59) When spring brakes come on, lightly loaded vehicles will build air pressure quickly.  
a) True  
b) False
60) The s-cam drum is the most common type of foundation brake.
   a) True
   b) False

61) The supply pressure gauge tells you how long before the s-cam turns.
   a) True
   b) False

62) Drum brakes are the only type of brake in which brake fade occurs.
   a) True
   b) False

63) On a heavy vehicle, the emergency brake is usually held in place by spring pressure because air pressure can leak away.
   a) True
   b) False

64) Some vehicles have a separate air tank which can be used to release the spring brakes.
   a) True
   b) False

65) The two systems of a dual air brake system is the primary and secondary.
   a) True
   b) False

66) The spring brakes come on when the air pressure drops too much.
   a) True
   b) False

67) When the brakes are very hot you should not use the parking brake.
   a) True
   b) False

68) The total stopping distance traveling at 55 mph under normal conditions is about 100 feet.
   a) True
   b) False

69) Modern air brake systems use three braking systems - service, parking and emergency.
   a) True
   b) False

70) The air compressor regulator controls when the air compressor will pump air into the air storage tanks.
   a) True
   b) False

71) The alcohol evaporator condenses the air in the brake system.
   a) True
   b) False
72) The first tank the air compressor pumps air to is installed with a safety relief valve to protect the tank and the rest of the system from too much air pressure.
   a) True
   b) False

73) While testing the service brakes, if your vehicle pulls to one side, there may be a problem with the service brakes.
   a) True
   b) False

74) When going down a long or steep downgrade, the braking effects of the engine should be supplemented by the use of the brakes.
   a) True
   b) False

75) You should maintain steady pressure on the brakes and hold the steering wheel firmly when the wheels lock up.
   a) True
   b) False

76) The air compressor governor controls:
   a. the speed of the air compressor.
   b. air pressure applied to the brakes.
   c. when the compressor will pump air into the storage tanks.

77) Modern air brake systems combine three different systems. They are the service brake, the parking brake and the:
   a. emergency brakes.
   b. foot brakes.
   c. S-cam brakes.

78) If the air compressor develops a leak, what keeps the air in the tank?
   a. the tractor protection valve.
   b. the emergency relay valve.
   c. the one way check valve.

79) Vehicles with air brakes must have:
   a. at least two air tanks.
   b. an air pressure gauge, to show the pressure available for braking.
   c. an air use gauge, to show air used by the brake chambers for braking.

80) A straight truck or bus air brake system cannot leak more than ____ per minute with the engine off and the brakes released.
   a. 1 psi
   b. 2 psi
   c. 3 psi

81) During normal driving, parking and emergency brakes are usually held back by:
   a. air pressure.
   b. spring pressure.
   c. centrifugal force.
82) To check the free play in the manual slack adjusters, you need to:
   a. stop on level ground and apply the parking brake.
   b. park on level ground, chock the wheels and release the parking brake.
   c. apply the service brake by hand and watch the slack adjusters move.

83) The effectiveness of the spring brakes:
   a. has nothing to do with the condition of the service brake.
   b. can only be tested by highly trained brake service people.
   c. depends on the adjustments of the service brakes.

84) Which of the following makes total stopping distance longer for air brakes than hydraulic?
   a. perception distance.
   b. reaction distance.
   c. brake lag.

85) The first thing to do when a low pressure warning comes on is:
   a. stop and safely park as soon as possible.
   b. upshift.
   c. open the air supply valve.

86) Air braking takes more time than hydraulic braking because air brakes:
   a. use different brake drums.
   b. need to have air flow through the lines to work.
   c. require heavier return springs.

87) Experts do not recommend fanning (on-again off-again braking) for long downhill runs because:
   a. air usage is less when fanning.
   b. brake linings do not get hot when fanning.
   c. the short time off the brakes does not allow the brakes to cool.

88) Oil and water that collects in air tanks can make brakes fail. If you do not have automatic tank drains, when should you drain the air tanks?
   a. every other day.
   b. every day.
   c. every week.

89) the driver must be able to see a warning that is given when air pressure in the service air tanks falls below:
   a. 40 psi.
   b. 50 psi.
   c. 60 psi.

90) An air brake system safety relief valve opens at about:
   a. 20 to 45 psi.
   b. 120 psi.
   c. 150 psi.

91) When some air brakes in the system are doing more work than others:
a. those brakes will develop more heat.
b. vehicle handling will be effected.
c. all the above.

92) Your safety relief valve has opened several times. This means______.
a. the system is working properly.
b. your pressure is probably low.
c. the system needs immediate attention.

93) At what air pressure should the low air warning alarm come on?
a. 45 psi.
b. 25 psi.
c. must come on by 60 psi.

94) With the brakes released on a single vehicle, what is the allowable air lose?
a. 4 psi.
b. 3 psi.
c. 2 psi.

95) To test the air compressor on a dual air brake vehicle, run the engine at a fast idle to charge the air the system. Your gauges should show your__________.
a. pressure builds from 85 to 100 psi within three minutes.
b. your pressure builds from 85 to 100 psi within 45 seconds.
c. the compressor cuts out by 75 psi.

96) Spring brakes are applied by__________?
a. air pressure.
b. electrical current.
c. a means other than air, electrical or hydraulic.

97) Most large vehicles with air brakes have spring brakes which______.
a. are part of the parking brake systems operation only.
b. are part of the service brake system only.
c. are part of both the parking and emergency brakes.

98) What color is the parking control knob on the dash of the vehicle?
a. red.
b. green.
c. yellow.

99) What would cause all of the air brake systems on a vehicle to have poor braking power.
a. low hydraulic fluid.
b. brakes being out of adjustment.
c. a broken air line.

100) If a low air pressure warning comes on what should you do?
a. pull off the road as soon as it is safe to do so.
b. you can safely continue until you get to the next service center.
c. turn it off so that it will not distract you.

101) "Cut-in" pressure is normally set to______ psi.
102) How often should you drain your air tanks?
   b. Ever 3 months or 3000 miles.
   c. Daily.

103) Which of the following is not an air brake subsystem?
   a. Spring brake system.
   b. Service brake system.
   c. Parking brake system.

104) What is a "Wig Wag"?
   a. A mechanical arm that signals low air pressure.
   b. A spring mount for hair pieces.
   c. Part of the stop light system.

105) "Cut – out" pressure is normally set to ____ psi.
   a. 100.
   b. 125.
   c. 150.

106) Front brake limiting valves are found on:
   b. New import vehicles only.
   c. School buses.

107) To reduce the risk of ice, some air systems incorporate:
   a. An air compressor heating unit.
   b. An air tank warmer unit.
   c. An alcohol evaporator.

108) At 55 MHP brake lag (on air brake vehicles) can add an additional ____ feet to your
     overall stopping distance.
   a. 32 feet.
   b. 64 feet.
   c. 100 feet.

109) When testing service brakes you should look for:
   a. Pulling to either side.
   b. Delayed stopping action.
   c. All the above.

110) In newer vehicles, parking brakes are applied using:
   a. A blue flip switch.
   b. A yellow and red lever.
   c. A yellow diamond shaped push-pull knob.
### Air Brakes – Practice Test – Answers

| 1) | 2) | 3) | 4) | 5) | 6) | 7) | 8) | 9) | 10) | 11) | 12) | 13) | 14) | 15) | 16) | 17) | 18) | 19) | 20) | 21) | 22) | 23) | 24) | 25) |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| C  | B  | B  | C  | A  | D  | C  | A  | A  | C  | A  | B  | A  | D  | A  | B  | D  | A  | C  | B  | A  | D  | A  | C  | A  | C  |
| A  | D  | A  | A  | B  | A  | A  | A  | C  | B  | A  | B  | D  | A  | B  | A  | B  | A  | C  | B  | A  | D  | A  | C  | A  | C  |
| C  | C  | C  | A  | A  | A  | A  | A  | C  | B  | A  | A  | D  | A  | B  | A  | B  | A  | C  | B  | A  | D  | A  | C  | A  | C  |
| A  | B  | B  | B  | A  | A  | A  | A  | C  | B  | A  | A  | D  | A  | B  | A  | B  | A  | C  | B  | A  | D  | A  | C  | A  | C  |
| A  | C  | A  | C  | A  | A  | A  | A  | C  | B  | A  | A  | D  | A  | B  | A  | B  | A  | C  | B  | A  | D  | A  | C  | A  | C  |
| A  | D  | A  | A  | B  | A  | A  | A  | C  | B  | A  | A  | D  | A  | B  | A  | B  | A  | C  | B  | A  | D  | A  | C  | A  | C  |
| A  | D  | A  | A  | B  | A  | A  | A  | C  | B  | A  | A  | D  | A  | B  | A  | B  | A  | C  | B  | A  | D  | A  | C  | A  | C  |
| A  | D  | A  | A  | B  | A  | A  | A  | C  | B  | A  | A  | D  | A  | B  | A  | B  | A  | C  | B  | A  | D  | A  | C  | A  | C  |
| A  | D  | A  | A  | B  | A  | A  | A  | C  | B  | A  | A  | D  | A  | B  | A  | B  | A  | C  | B  | A  | D  | A  | C  | A  | C  |
In This Section
The Class A commercial drivers license requires passing the Combination Vehicles Endorsement exam. It is required for tractor-trailers and doubles / triples. If you need a doubles / triples endorsement, you will need to study that section and take the doubles / triples endorsement exam in addition to the Combination Vehicles Endorsement exam.

Trailer Hand Valve
The trailer hand valve is also called the trolley valve or Johnson bar. It works only the trailer brakes. Not all towing vehicles (trucks or tractors) have trailer hand valves. Use the hand valve to test the brakes. Do not use it when driving because it could make the trailer skid. When you are driving, use the foot brake. The foot brake sends air to all of the brakes on the vehicle, including the trailer(s). Never use the hand valve for parking. All the air might leak out unlocking the brakes in trailers that don't have spring brakes. This would allow the vehicle to roll away. Always use the parking brakes when parking. If the trailer does not have spring brakes, use wheel chocks to keep the trailer from moving. Turn off the tractor engine and put the transmission in the lowest forward gear or reverse for parking.

Tractor Protection Valve
If the trailer breaks away or develops a bad leak, the tractor protection valve closes and keeps air in the tractor or truck.
- The tractor protection valve is controlled by the trailer air supply control in the cab.
- The trailer air supply valve allows you to open and shut the tractor protection valve.
- The tractor protection valve will close automatically if air pressure is low (in the range of 20 to 40 psi).
- When the tractor protection valve closes, it stops air from going out of the tractor. It also lets air out of the trailer emergency line. This causes the trailer emergency brakes to come on.

Trailer Air Supply Control
On newer vehicles, the trailer air supply control is a red 8-sided knob. You use this knob to control the tractor protection valve.
- Push it in to supply the trailer with air. Pull it out to shut off the air and put on the trailer emergency brakes.
- If air pressure drops in to the range of 20 to 40 psi, the valve will pop out and close the tractor protection valve.
- On older vehicles, tractor protection valve controls or emergency valves may not operate automatically.
- You may have a lever rather than a knob.
- Use the normal position for pulling the trailer.
- Use the emergency position to shut off air and put on the trailer emergency brakes.
Trailer Air Lines
Every combination vehicle has two air lines: the service line and the emergency line. They run between each vehicle-tractor to trailer, trailer to dolly, dolly to second trailer. The service line is also called the control line or signal line.
- It carries air which is controlled by the foot brake or the trailer hand brake.
- Pressure in the service line changes depending on how hard you press the foot brake or hand valve.
- The service line is connected to relay valves. These valves allow the trailer brakes to be applied more quickly.

The emergency line is also called the supply line. It has two purposes:
1. First, it supplies air to the trailer air tanks.
2. Second, it controls the emergency brakes on combination vehicles.

Loss of air pressure in the emergency line causes the trailer brakes to come on. Loss of pressure could be caused by the trailer braking loose and tearing apart the emergency air hose. It could also be caused by a hose, metal tubing or other part which breaks and lets out the air. When the emergency line loses pressure, it also causes the tractor protection valve to close. When this happens, the air supply knob will pop out. Emergency lines are often coded with the color red-red hose, red couplers. This keeps them from getting mixed up with the blue service line.

Hose Couplers or Glad Hands
Glad hands are coupling devices. They connect the service and emergency air lines from the truck or tractor to the trailer.
- Couplers have a rubber seal which prevents air from escaping.
- Clean the couplers and rubber seals before connecting the lines.
- When you connect the glad hands, press the two seals together with the couplers at a 90 degree angle to each other.
- A turn of the glad hand attached to the hose will join and lock the couplers.
- Some vehicles have dead end or dummy couplers. Attach hoses to these when they are not in use. This prevents water and dirt from getting into the coupler and the air lines. If the vehicle does not have dummy couplers, the glad hands can sometimes be locked together.

When coupling, make sure that you couple the right glad hands together. To help avoid mistakes, some vehicles have color-coded hoses and couplers. Blue is used for the service lines and red is used for the emergency (supply) lines. Sometimes metal tags with the words "service" and "emergency" are attached to the lines.

If you cross the air lines, supply air will be sent to the service line and will not charge the trailer air tanks. Air will not be available to release the trailer spring brakes (parking brakes). If the spring brakes don't release when you push the trailer air supply control, check the air line connections. Older trailers do not have spring brakes. If the air supply in the trailer air tank has leaked away, there will be no emergency brakes and the trailer wheels will turn freely. If you crossed the air lines, you could drive away, but you would not have trailer brakes. This is very dangerous.
Always test the trailer brakes before driving. Use the hand valve or pull the air supply control (tractor protection valve control). Pull gently against the trailer in a low gear to make sure the brakes work.

**Trailer Air Tanks**
Each trailer and converter dolly has one or more air tanks. These air tanks are filled by the emergency (supply) line from the tractor.
- The tanks provide the air pressure used to operate the trailer brakes.
- Air pressure is sent from the air tanks to the brakes by the relay valves.
- Pressure in the service line tells how much pressure the relay valves should send to the trailer brakes. The pressure in the service line is controlled by the brake pedal and the trailer hand brake.

Don't let water and oil build up in the air tanks. If you do, the brakes may not work. Each tank has a drain valve on it. **Drain each tank every day.** If your tanks have automatic drains, they will keep the moisture out. But open the drains to make sure.

**Shut-off Valves**
Shut-off valves are also called cut-out cocks. They are used in the service and emergency air lines at the back of trailers that tow other trailers.
- These valves let you close the air lines when another trailer is not being towed.
- Check that all shut-off valves are in the open position except the ones at the back of the last trailer.
- The valves at the back of the last trailer must be closed.

**Trailer Service, Parking and Emergency Brakes**
**New trailers** have spring brakes just like trucks and truck tractors.
**Converter dollies and trailers built before 1975** are not required to have spring brakes. Trailers that do not have spring brakes have emergency brakes which work from the air stored in the trailer air tank. The emergency brakes come on whenever air pressure in the emergency line is lost. These trailers do not have a parking brake. The emergency brakes come on whenever the air supply knob is pulled out or the trailer is disconnected. But, the brakes will not hold if there is not sufficient air pressure in the trailer air tank. Eventually, the air will leak away and there will be no brake. Therefore, always use wheel chocks when you park trailers without spring brakes.

**A major leak in the emergency line** will cause the tractor protection valve to close and the trailer emergency brakes to come on. You may not notice a leak in the service line until you put the brakes on. Then, the air loss from the leak will lower the air tank pressure quickly. If it goes low enough, the trailer emergency brakes will come on.

**Inspection of a Combination Vehicle**
Use the General Knowledge – Pre-Trip inspection procedure to inspect your combination vehicle. Inspection of some items is covered in greater detail in this section, be very careful to inspect the following:

**Coupling System and Landing Gear**
**Check the lower fifth wheel**
- Mounting to the frame should be secure.
- Check to be sure there are no missing or damaged parts.
- Be sure there is enough grease (if the trailer is not hooked up).
- You should not see space between the upper and lower fifth wheel.
- Locking jaws should be around the shank, **not** the head of the kingpin.
- The release arm should be properly seated and the safety latch/lock engaged.

**Check the upper fifth wheel**
- Be sure the glide plate is securely mounted to the trailer frame.
- Be sure that the kingpin is not damaged.

**Check the sliding fifth wheel**
- There should not be any damaged or missing parts.
- It should be properly greased.
- All locking pins should be present and locked in place.
- If air powered, there should be no air leaks.
- Check that the fifth wheel is not so far forward that the tractor frame will hit the landing gear or that the cab will hit the trailer during turns.

**Check the air and electric lines to the trailer**
- Be sure that the electrical cord is plugged in and secured.
- Air lines should be properly connected to the gland hands. You should not have air leaks. Airlines should be secured with enough slack for turns.
- All lines should be free from damage.

**Check the landing gear**
- Be sure that the landing gear is fully raised. Check for missing, bent or damaged parts. Make sure the crank handle is in place and secured.
- If the landing gear is power operated, make sure that there are no air or hydraulic leaks.

**Air Brakes**
Make the following checks in addition to the pre-trip checks that you make for your air brakes. Check the airbrakes on a double or triple trailer the same way you check them for any combination vehicle.

**Be sure air flows to all trailers**
Use the tractor parking brake or chock the wheels to hold the vehicle.
- Wait for the air pressure to reach normal, then push the red trailer air supply knob. This will send air to the emergency (supply) lines.
- Use the trailer handbrake to send air to the service line.
- Go to the back of the last trailer. You should hear air escaping. This shows that the entire system is charged.
- Close the emergency line valve.
- Be sure that either the trailer handbrake or the service brake pedal is on. Open the service line valve to check that service pressure goes through all trailers. Then, close the valve. If you **do not** hear air escaping from both lines, be sure that the shut-off valves on the trailer(s) and dolly(s) are **open**. You must have air all the way to the back for all the brakes to work.
Test the tractor protection valve

1. Charge the trailer air brake system. Build up normal air pressure and push in the air supply knob.
2. Turn off the engine.
3. Step on the brake pedal several times to reduce air pressure in the tanks.
4. When the air pressure falls into the pressure range specified by the manufacturer (usually within the range of 20 to 40 psi), the trailer air supply control should pop out or go from the normal position to the emergency position. The trailer air supply control may also be called the tractor protection valve control.
5. If the tractor protection valve doesn't work right, an air hose or trailer brake leak could drain all the air from the tractor. This would cause the emergency brakes to come on and you could lose control.

Test the trailer emergency brakes

1. Charge the trailer air brake system and check that the trailer rolls freely.
2. Stop and pull out the trailer air supply control (tractor protection valve control or trailer emergency valve) or place it in the emergency position.
3. Pull the trailer gently with the tractor to be sure that the trailer emergency brakes are on.

Test the trailer service brakes

Check for normal air pressure

- Release the parking brakes and move the vehicle forward slowly.
- Apply trailer brakes with the hand control (trolley valve).
- You should feel the brakes come on. This tells you that the trailer brakes are connected and working.

Note: The trailer brakes should be tested with the hand valve. In normal operation, however, control the trailer brakes with the foot pedal. The foot pedal applies air to the service brakes at all wheels.

Coupling and Uncoupling Combination Vehicles

Coupling and uncoupling is basic to the safe operation of combination vehicles. Wrong coupling and uncoupling can be dangerous. The makes and models of rigs are different. So, learn the details of coupling and uncoupling for the trucks that you will operate.

Coupling Tractor-Semitrailers

Inspect the fifth wheel

- Check for damaged or missing parts.
- Check to see that the mounting to the tractor is secure. Make sure there are no cracks in the frame.
- Be sure that the fifth wheel plate is greased. Failure to keep the fifth wheel plate greased could cause steering problems because of friction between the tractor and trailer.
- Make sure the fifth wheel is in the proper position for coupling:
  - The wheel should be tilted down toward the rear of the tractor.
  - The jaws should be open.
  - The safety unlocking handle should be in the automatic lock position.
• If you have a sliding fifth wheel, make sure it is locked.
• Make sure that the trailer kingpin is not bent or broken.

Inspect the area and chock the wheels
• Make sure the area around the vehicle is clear.
• Be sure the trailer wheels are chocked or the spring brakes are on.
• Be sure that cargo is secured so that it will not move while the tractor is being coupled to the trailer.

Position the tractor
• Put the tractor directly in front of the trailer. Never back under the trailer at an angle. You might push the trailer sideways and break the landing gear.
• Use your mirrors to check your position by looking down both sides of the trailer.

Back Slowly
• Back until the fifth wheel touches the trailer.
• Don't hit the trailer.

Secure the tractor
• Put on the parking brake.
• Put the transmission in neutral.

Check the trailer height
• The trailer should be low enough that it is raised slightly by the tractor when you back the tractor under it.
• Raise or lower the trailer as needed. If the trailer is too low, the tractor may strike and damage the nose of the trailer. If the trailer is too high, it may not couple correctly. This can result in damage to the back of the cab and could require heavy equipment to move the tractor from the trailer.

Connect the air lines to the trailer
• Check the glad hand seals and connect the tractor emergency air line to the trailer emergency glad hand.
• Check the glad hand seals and connect the tractor service air line to the trailer service glad hand.
• Make sure the air lines are safely supported so that they won't be crushed or caught while you back the tractor under the trailer.

Supply air to the trailer
• From the cab, push in the trailer air supply knob or move the tractor protection valve control from the emergency to the normal position. This will supply air to the trailer brake system.
• Wait until the air pressure is normal.
• Check the brake system for crossed air lines.
• Shut off the engine so you can hear the brakes.
• Apply and release the trailer brakes and listen for the sound of the trailer brakes being applied and released. You should hear the brakes move when applied and air escape when the brakes are released.
• Check the air brake system pressure gauge for signs of major air loss.
• When you are sure the trailer brakes are working, start the engine.
• Make sure the air pressure is up to normal.

**Lock the trailer brakes**
Pull out the trailer air supply knob or move the tractor protection valve from normal to emergency.

**Back under the trailer**
• Use the lowest reverse gear.
• Back the tractor slowly under the trailer to avoid hitting the kingpin too hard.
• Stop when the kingpin locks into the fifth wheel.

**Check the connection for security**
• Raise the trailer landing gear slightly off the ground.
• Pull the tractor gently forward while the trailer brakes are locked to be sure that the trailer is locked onto the tractor.
• Secure the vehicle.
• Put the transmission in neutral.
• Put on the parking brakes.
• Shut off the engine. Take the key with you so someone else won't move the truck while you are under it.

**Inspect the coupling**
• Use a flashlight if necessary.
• Make sure that there is no space between the upper and lower fifth wheel. If there is space, something is wrong. The kingpin may be on top of closed fifth wheel jaws and the trailer would come loose very easily.
• Go under the trailer and look into the back of the fifth wheel. Make sure the fifth wheel jaws have closed around the shank of the kingpin. Refer to the diagram.
• Check that the locking lever is in the lock position.
• Check that the safety latch is in the position over the locking lever. On some fifth wheels the catch must be put in place by hand.

**Connect the electrical cord and check the air lines**
• Plug the electrical cord into the trailer and fasten the safety catch.
• Check the air lines and electrical lines for signs of damage.
• Make sure the air and electrical lines will not hit any moving parts of the vehicle.

**Raise the front trailer supports (landing gear)**
• Use low gear range to begin raising the landing gear. Once free of weight, switch to the high gear range.
• Raise the landing gear all the way up. Never drive with the landing gear part of the way up. It could catch on railroad tracks or other things.
• After raising the landing gear, secure the crank handle.
• When the full weight of the trailer is resting on the tractor:
• Check for enough clearance between the rear of the tractor frame and the landing gear. When the tractor turns sharply, it must not hit the landing gear.
• Check for enough clearance between the top of the tractor tires and the nose of the trailer.
Uncoupling Tractor-Semitrailers

Position the rig
Make sure the surface of the parking area can support the weight of the trailer. Line up the tractor with the trailer. Pulling out at an angle can damage the landing gear.

Ease the pressure on the locking jaws
- Shut off the trailer air supply to lock the trailer brakes.
- Ease pressure on the fifth wheel locking jaws by backing up gently. This will help you release the fifth wheel locking lever.
- Put the parking brakes on while the tractor is pushing against the kingpin. This will hold the rig with pressure off the locking jaws.

Chock the trailer wheels
Chock the trailer wheels if the trailer doesn't have spring brakes or if you aren't sure. The air could leak out of the trailer air tank and release the emergency brakes. Without chocks, the trailer could move.

Lower the landing gear
If the trailer is empty, lower the landing gear until it makes firm contact with the ground. If the trailer is loaded, turn the crank in low gear a few extra turns after the landing gear makes firm contact with the ground. This will lift some weight off the tractor. This makes it easier to unlatch the fifth wheel. It also makes it easier to couple next time.

Disconnect the air lines and electrical cable
- Disconnect the air lines from the trailer. Connect the glad hands to the dummy couplers at the back of the cab or couple them together.
- Hang the electrical cable with the plug down to prevent moisture from entering it.
- Make sure the lines are supported so they won't be damaged while driving the tractor.

Unlock the fifth wheel
- Raise the release handle lock.
- Pull the release handle to the open position.
- Keep your feet and legs clear of the rear tractor wheels to avoid serious injury in case the vehicle moves.

Pull the tractor partly clear of the trailer
- Pull the tractor forward until the fifth wheel comes out from under the trailer.
- Stop with the tractor frame under the trailer. This prevents the trailer from falling to the ground if the landing gear collapses or sinks.

Secure the tractor
- Apply the parking brake.
- Place the transmission in neutral.
Inspect the trailer supports
- Make sure the ground is supporting the trailer.
- Make sure the landing gear is not damaged.

Pull the tractor clear of the trailer
- Release the parking brakes.
- Check the area and drive the tractor forward until it clears the trailer.

Driving Combination Vehicles

Rollovers
More than half of truck driver deaths in crashes result from truck rollovers. Piling up cargo in the truck moves the center of gravity higher from the road. A higher center of gravity makes it easier for the truck to turn over. A fully loaded rig is 10 times more likely to roll over in a crash than an empty rig.

Two things can help keep you from rolling your vehicle:
1. Keep the cargo as close to the ground as possible. Also load the cargo so that it is centered on your rig. Cargo that is loaded to one side can make the trailer lean and could cause the vehicle to roll over.
2. Drive slowly around turns. Reduce your speed on on- and off-ramps. Avoid quick lane changes, especially when fully loaded.

Rearward Amplification and the Crack-the-Whip Effect
The effects of motion increase as the motion travels from the front of the truck to the rear. This is called rearward amplification and causes the crack-the-whip effect or fishtailing. When you make a quick lane change, the crack-the-whip effect can turn over the trailer. Triples have a rearward amplification of 3.5 and are 3 and one-half times as likely to turn over as a five-axle tractor and trailer.

Steering
- To avoid the crack-the-whip effect, steer gently and smoothly when you pull a trailer or trailers.
- Follow far enough behind other vehicles—at least one second for each 10 feet of your vehicle length plus another second if you are going over 40 mph.
- Look far enough down the road to avoid having to make a sudden lane change.
- At night, drive slowly enough to see obstacles soon enough that you can change lanes or stop gently.
- Always slow down to a safe speed before going into a turn.

Braking
- Control your speed to avoid having to make sudden stops.
- Large combination vehicles take longer to stop when they are empty than when they are fully loaded.
- When lightly loaded, the stiff suspension springs and strong brakes make it easy to lock the wheels. Your trailer can swing out and strike other vehicles. Your tractor can jackknife very quickly.
- Bobtail tractors (tractors without semitrailers) can be hard to stop smoothly. It takes longer to stop a bobtail than it takes to stop a tractor-semitrailer loaded to the maximum gross weight.
- In any combination rig, allow plenty of following distance. Look far enough ahead so that you can brake early.

**Preventing Skids**
When the wheels of a trailer lock up the trailer tends to swing around. This is called a trailer jackknife. This is more likely to happen when the trailer is empty or loaded lightly.

To stop a skid, follow these steps:

1. **Recognize the skid.** You can check for a skid by looking in your mirrors. Any time that you apply the brakes hard, check the mirrors to make sure the trailer is staying straight behind your vehicle. Once the trailer swings out of your lane, it's very difficult of prevent a jackknife.
2. **Stop using the brake.** Release the brakes to get traction. Do not use the trailer hand brake to straighten the trailer. This is the wrong thing to do since brakes on the trailer wheels caused the skid in the first place. Once the trailer wheels grip the road again, the trailer will start to follow the tractor and straighten out.

**Offtracking**
When a vehicle goes around a corner, the rear wheels follow a different path than the front wheels. This is called "offtracking" or "cheating."

Because of offtracking, the path followed by a tractor-semi is wider than the rig itself.

The rear wheels of the powered unit will offtrack some. The rear wheels of the trailer will offtrack even more. If there is more than one trailer, the rear wheels of the last trailer will offtrack the most. The longer the vehicle, the greater the amount of offtracking.

**Steering**
- Steer the front end of your vehicle wide enough around a corner so that the rear end does not run over the curb, pedestrians and other vehicles.
- At the same time, keep the rear end of your vehicle close to the curb. This will stop other drivers from passing you on the right.
- If you cannot complete the turn without entering another traffic lane, turn wide as you complete the turn.
Commercial Drivers License
Combination Vehicles Test - Practice

Introduction

This study guide contains one hundred eight commercial drivers license combination vehicles test questions and answers. These questions and answers were written by professional authors with extensive knowledge and experience in the transportation industry. This study guide was designed to help drivers pass the commercial drivers license combination vehicles endorsement exam. The questions pertained in this study guide are not the actual questions that will appear on the commercial drivers license exam. It is unlawful to distribute the actual test questions found on the commercial drivers license exam.

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Combination Vehicles – Practice Test Questions

1) What is one important thing to do to prevent a rollover?
   a) Drive slowly
   b) Enter curves with caution
   c) Keep cargo as close to ground as possible
   d) Do not accelerate in curves

2) When you turn suddenly while pulling doubles, which trailer is most likely to turn over?
   a) Front
   b) Rear

3) When should you use the trailer handbrake to straighten out a jackknifing trailer?
   a) As soon as you start to jackknife
   b) When coming out of a jackknife
   c) When coming to a sudden stop
   d) Never

4) What is “offtracking”?
   a) When the rear wheels follow a different path than the front wheels
   b) When the steering becomes confined due to tight corners
   c) When the front wheels start to slide forward from over-steering
   d) Form of gambling

5) Why should you not use the trailer hand valve while driving?
   a) Can cause you to come to a sudden stop
   b) Can make the trailer skid
   c) Can cause you to release the trailer brakes
   d) Can separate the trailers

6) What does the trailer air supply control do?
   a) Allows you to separate from the trailer
   b) Supplies air to the tractor
   c) Controls the windsheer for the trailers
   d) Supplies air to the trailer

7) What is the service line for?
   a) Supplies air to the trailer air tanks
   b) Supplies air to the footbrake and trailer handbrake
   c) Carries air controlled by the footbrake or trailer handbrake
   d) A line at the fueling station

8) What is the emergency air line for?
   a) Supplies air to the trailer air tanks
   b) Supplies air to the footbrake and trailer handbrake
   c) Carries air controlled by the footbrake or trailer handbrake
   d) A back up air tank
9) Where are shut off valves?
   a) At the front of trailers
   b) At the back of the tractor
   c) Behind the rear axle
   d) At the back of trailers

10) Why should you lock the glad hands together or to a dummy coupler, when not pulling a trailer?
   a) Keeps water and dirt out of the lines
   b) Brake circuit becomes a secondary tank
   c) Keeps air from escaping
   d) All of these

11) How much space should there be between the upper and lower 5th wheel plates?
   a) about 1/4 inch
   b) about 1/2 inch
   c) about 1 inch
   d) no space at all

12) If the trailer breaks away and pulls apart the air lines, the trailer brakes would apply, and:
   a) Tractor brakes to lock up
   b) The trailer supply valve to stay open
   c) The tractor brakes to keep working
   d) The tractor to lose all air pressure

13) When hooking a trailer to a tractor, the trailer is at the right height when:
   a) The coupling surface of the trailer is just below the middle of the tractor 5th wheel
   b) Beginning of the kingpin is even with the top of the lower 5th wheel
   c) Kingpin is about 2 1/4 inches above the 5th wheel
   d) Trailer dolly wheels are fully extended

14) After hooking the trailer to the tractor, check the 5th wheel connection by:
   a) Pulling the tractor ahead gently with the trailer brakes locked
   b) Pulling tractor ahead sharply to release the trailer brakes
   c) Releasing the trailer brakes and backing up
   d) Driving to 20 mph and pulling the trailer hand valve

15) What will happen right away if the service line disconnects while you are driving?
   a) Nothing until you try the brakes
   b) Emergency trailer brakes will come on
   c) Trailer’s air tank will exhaust through the open line
   d) Emergency tractor brakes will come on

16) When backing up under a trailer, you should line up:
   a) To the left rear inside dual wheel with the left side of the trailer
   b) Directly in front of the trailer
   c) The right mirror along the edge of the trailer
   d) About 15 degrees off the line of the trailer
17) When hooking a tractor to a semi trailer, after connecting both air lines and before backing under the trailer, you should:
   a) Blow your horn to warn other drivers
   b) Be sure the trailer brakes are off
   c) Supply air to the trailer system, the pull the air supply knob to lock the brakes
   d) Pull forward to test glad hand connections

18) How do you supply air to the tank on the trailer?
   a) Connect the emergency line glad hand
   b) Pull out the trailer air supply valve
   c) Push in the trailer air supply valve
   d) None of these

19) What color is the emergency air line on a combination vehicle?
   a) Red
   b) Black
   c) Blue
   d) Orange

20) When should the valve hand be used to park a combination vehicle?
   a) At loading docks
   b) Never
   c) When parking on a steep grade
   d) When parking for a short period of time

21) Air brake equipped trailers that were made before 1975:
   a) Cannot be operated on an interstate highway
   b) Usually require a glad hand converter
   c) Are easier to stop than newer trailers
   d) Usually don't have spring brakes

22) After coupling a semitrailer, how should you crank up the front trailer supports?
   a) 3 turns off the top with the crank handle secured in its bracket
   b) Fully raised with crank handle secured
   c) Raised 3/4 way with crank handle removed
   d) Raised 1/2 way with crank handle secured

23) What can happen when a driver crosses the air lines on an older trailer?
   a) The brake lights will not come on when the pedal is pressed
   b) If the trailer does not have spring brakes, you may drive but wouldn’t have trailer brakes
   c) The brake pedal will work the spring brakes instead of the air brakes
   d) The hand valve will apply the tractor brakes instead of the trailer brakes

24) When the 5th wheel locking lever is not locked after the jaws close around the kingpin, what may happen?
   a) The coupling should need to be corrected before driving the coupled unit
   b) The hand valve is released and you may drive off
   c) The 5th wheel cannot be set for the correct weight distribution
   d) The trailer won't swing on the 5th wheel
25) With the brakes released and the engine off, a combination vehicle air brake system should not leak more than ____ psi in one minute.
   a) 1  
   b) 2  
   c) 3  
   d) 4

26) What is one thing a driver can do to prevent a rollover?
   a) Keep the 5th wheel free play loose  
   b) Slow down before entering a turn  
   c) Keep both hands on the wheel  
   d) Make sure the brakes are adjusted properly

27) After pushing in the trailer supply valve, do not move the tractor until the entire air system is:
   a) Between 50 and 60 psi  
   b) Is half the maximum pressure  
   c) Is above 60 psi and the warning buzzer has stopped  
   d) Charging

28) After hooking a tractor to a semitrailer, what should you do before backing under it?
   a) Just back up and secure the 5th wheel to the trailer  
   b) Connect the ground cable  
   c) Hook up the service line and emergency line  
   d) Hook up the electrical cable

29) Which part of the kingpin should the locking jaws close around?
   a) The base  
   b) The shank  
   c) The head  
   d) The neck

30) You should test the semi trailer connection for security by:
   a) Rocking the trailer back and forth with the trailer brakes locked  
   b) Putting the tractor in gear and pulling ahead with a sharp jerk  
   c) Pulling gently forward in low gear against the locked trailer brakes, then looking at it carefully  
   d) Asking an experienced driver or manager

31) Why should you be sure that the fifth wheel plate is greased as required?
   a) To ensure good electrical connections  
   b) To prevent steering problems  
   c) To reduce heat and noise  
   d) To have peace of mind

32) After you supply air to the trailer, make sure the air lines are not crossed and the trailer brakes are working, by:
   a) Turning on the parking brakes from the cab  
   b) Lifting the brake pedal  
   c) Applying and releasing the trailer brakes and listening for sounds  
   d) Pumping the brake pedal
33) What can be done to prevent a rollover?
   a) Slow down around turns
   b) Keep the fifth wheel's free play as tight as possible
   c) Make sure that the brakes are properly adjusted
   d) Make sure the load is secure

34) What is one thing you should do before backing under a trailer?
   a) Make sure the trailer brakes are locked
   b) Make sure the tractor protection valve is normal
   c) Make sure the air brakes are off
   d) Make sure the trailer is stable

35) The safety catch for the fifth wheel locking lever must be ____ for a coupling to be complete.
   a) Through the locking lever
   b) Over the locking lever
   c) Under the locking lever
   d) Away from the locking lever

36) The front trailer supports are up and the trailer is resting on the tractor. Make sure:
   a) There is enough clearance between the tops of the tractor tires and the nose of the trailer
   b) There is enough clearance between the tops of the tractor tires
   c) There is enough clearance between the kingpin and the 5th wheel
   d) There is enough clearance between the tops of the tractor tires and the nose of the trailer and there is enough clearance between the kingpin and the 5th wheel

37) You have a major leak in the service line and you put on the brakes.
   Service air pressure will escape and cause the:
   a) Trailer tank pressure to be lost
   b) Trailer emergency brakes to come on
   c) Trailer to separate from the tractor
   d) All of these

38) When backing under a trailer, you should expect:
   a) Trailer landing gear to be fully extended
   b) End of the kingpin to be even with the top of the 5th wheel
   c) Trailer to be lifted slightly when the tractor backs under
   d) The wheel chocks to be set

39) You have coupled with a semi trailer. In what position should you put the front trailer supports before driving away?
   a) Raised 1/2 way with the crank handle removed
   b) Fully raised with the crank handle secured in its bracket
   c) Three turns off the top with the crank handle secured in its bracket
   d) Two turns away with the crank handle free

40) Which of these statements is true?
   a) Bobtail tractors can take longer to stop than combination vehicles loaded to the maximum gross weight.
   b) Always delay braking a heavy vehicle until you have no other choice
   c) Light vehicles need more braking power to stop than heavy ones
d) Heavy vehicles stop faster than light vehicles with a heavy load

41) What should the hand valve be used for?
   a) Only with the foot brake
   b) Only when the trailer is fully loaded
   c) To test the trailer brakes
   d) Never be used

42) Fully loaded rigs are 10 times more likely to roll over in a crash than empty rigs.
   a) True
   b) False

43) Cargo should be kept as high off the ground as possible.
   a) True
   b) False

44) The crack-the-whip effect is caused by rearward amplification.
   a) True
   b) False

45) Heavily loaded trailers are more likely to jackknife than lightly loaded trailers.
   a) True
   b) False

46) It takes a bobbitt longer to stop than a fully loaded tractor-trailer.
   a) True
   b) False

47) If you go into a trailer skid, you should use the trailer hand brake to straighten out.
   a) True
   b) False

48) Before starting a right turn, you should swing wide to the left.
   a) True
   b) False

49) The trailer hand valve should never be used for parking.
   a) True
   b) False

50) The rear wheels of the trailer will offtrack the most.
   a) True
   b) False

51) The tractor protection valve keeps air in the tractor if the trailer breaks away.
   a) True
   b) False

52) Dummy, or dead end couplers prevent water and dirt from getting into the coupler and air lines.
   a) True
b) False

53) The 5th wheel plate could cause steering problems if not kept properly lubricated.
a) True
b) False

54) Always back your tractor under your trailer at an angle.
a) True
b) False

55) The trailer does not need to be level when the tractor is backed under it.
a) True
b) False

56) The tractor emergency air line should be connected to the trailer emergency glad hand.
a) True
b) False

57) Crossed air lines are only dangerous if you do not have a tractor emergency brake.
a) True
b) False

58) When properly coupled, the 5th wheel jaws should be closed around the shank of the kingpin.
a) True
b) False

59) There are two things a driver can do to prevent a rollover. They are, keep the weight in your vehicle as close to the floor as possible and:
a. Make sure that the brakes are properly adjusted.
b. Keep both hands firmly on the steering wheel.
c. Go slow around corners.

60) A device which corrects for brake lag on vehicles with air brakes is?
a. Quick release valve.
b. Relay valve.
c. Front wheel limiting valve.

61) Why should you be sure that the fifth wheel has enough grease?
a. To prevent steering problems.
b. To keep the brakes in place.
c. To reduce heat and noise.

62) You are coupling a tractor to a trailer and have backed up but are not under ft. What should you hook up before backing under the trailer?
a. The electric line.
b. The emergency and service air lines.

63) What part of the king pin should the locking jaws close around?
a. The shank.
b. The head.
64) Why should you lock the glad hands or dummy couplers to each other when you are not towing a trailer?
   a. The air cycles back, getting cleaner each cycle.
   b. The connected brake circuit becomes a backup air tank.
   c. This will keep dirt and water out of the lines.

65) If you are towing a trailer which blocks your view to the rear, The law requires that you have mirrors:
   a. On both left and right hand outside.
   b. On the left outside only.
   c. On the right outside only.

66) Except for trucks carrying livestock, a wheel or wheels at one end of an axle shall not carry more than:
   a. 11,000 lbs.
   b. 10,500 lbs.
   c. 12,000 lbs.

67) Which of the following statements is true.
   a. The brake and suspension system of combination vehicles are most effective with a light load.
   b. Light vehicles need more braking power to stop than heavy ones.
   c. Bobtail tractors take longer to stop than fully loaded combination vehicles.

68) Using the trailer hand valve before the brake pedal to prevent tractor skids in normal driving:
   a. Should not be done.
   b. Results in the least skidding.
   c. Is the best method of straight line braking.

69) Trailers made before 1975, equipped with air brakes:
   a. Often do not have spring brakes.
   b. Are heavier and safer to use.
   c. Usually need a glad hand converter.

70) When you get ready to back up under a trailer, line up:
   a. About 12 degrees off the line of the trailer.
   b. The kingpin to engage the driver's side locking jaws first.
   c. Directly in front of the trailer.

71) You have coupled a tractor to a trailer. Where should the landing gear be before driving away?
   a. One-half raised with the crank secured in its bracket.
   b. Three-quarters of the way up with the crank secured in its bracket.
   c. Fully raised with the crank handle in its bracket.

72) You are driving a semi and the trailer breaks away, pulling apart the air lines. You expect the trailer brakes to come on because:
   a. The spring brakes only work when the trailer is not connected to the tractor.
b. When the trailer emergency air line comes loose, the lose of air pressure causes the spring brakes to come on.
c. When the service air line comes loose, the lose of air pressure causes the spring brakes to come on.

73) What will happen if the service air line between the tractor and the trailer comes loose?
a. nothing.
b. nothing until the service brakes are applied, then a rapid air lose will occur.
c. the brakes will lock up as soon as the line come apart.

74) What will happen if the emergency air line between the tractor and trailer comes apart?
a. The trailer brakes will not work.
b. The tractor brakes will come on immediately.
c. The trailer brakes will come on as soon as the air lines come apart.

75) What should you always use when disconnecting from a trailer without spring brakes?
a. A helper.
b. A set of wheel chocks.
c. A set of dolly converter wheels.

76) After you have coupled a tractor to a trailer, you should always do which of the following:
a. Make sure that the trailer brakes are working by pulling forward and pull out the trailer air supply valve to make sure that the trailer brakes come on.
b. Make sure that the jaws have locked around the king pin, by releasing the tractor parking brake and pulling against the trailer.
c. both of the above answers are correct.

77) Another name for the trailer hand valve is:
a. Johnson bar.
b. trolley valve.
c. Both are correct.

78) What is the name of the coupler at the end of the air hoses that connect between the tractor and the trailer?
a. Dummy couplers.
b. Gladhands.
c. Deadends.

79) What is off tracking?
a. When the tractor is going in a straight line the trailer turns by its self.
b. The track that the rear wheels of the tractor make in relation to the steering tires.
c. The difference between the size of the steering tires and the trailer tires.

80) The air line that connects the emergency air brakes system to the trailer is what color?
a. Yellow.
b. Blue.
c. Red.
81) The air line that connects the service air brake system to the trailer is what color?
   a. Blue.
   b. Red.
   c. Yellow.

82) When inspecting the glad hands before connecting them together, you would check:
   a. The rubber grommets are not split or cracked.
   b. The drive shaft to make sure that it will not be hit by the air lines while driving.
   c. The front of the glad hand to make sure that the wooden chock is in place.

83) A tractor semi trailer will always have at least ___ 4/32 tread depth tires on the steering axle?
   a. 5.
   b. 2.
   c. 3.

84) What is a full trailer?
   a. A trailer that is filled to the top.
   b. A trailer that is attached directly to the powered unit.
   c. A trailer that is attached to the back of the first or second trailer behind the powered unit.

85) What is a semi trailer?
   a. A trailer that is attached to the rear of the second or third trailer behind the powered unit.
   b. A trailer that is attached directly to the powered unit.
   c. A trailer that is attached to a dolly.

86) To prevent rollovers, remember to:
   a. Keep the load centered.
   b. Go slow around turns.
   c. Both a & b are correct.

87) When traveling below 40 MPH, you should follow other vehicles:
   a. Only during the day.
   b. With a distance of one second for every ten feet of your vehicle.
   c. With a distance of one second for every 20 feet of your vehicle.

88) The easiest way to notice a trailer skid is?
   a. By feeling the pull on your steering wheel.
   b. By feeling a jerk in the back of the tractor.
   c. By seeing it in your mirrors.

89) If you start a trailer skid, you should:
   a. Step on the brake hard.
   b. Release the brake to get traction.
   c. Use the trailer hand valve.

90) The fifth wheel should be checked to see if:
   a. There is damage or missing parts.
   b. The jaws are open.
   c. Both a & b.
91) Which one of the following is controlled by the foot brake?
a. The service brake.
b. The emergency brake.
c. The shut off valve.

92) Offtracking occurs when you go around corner and:
a. The rear wheels follow a different track than the steering tires.
b. The rear trailer goes off the road.
c. The rear wheels follow the same path as the front tires.

93) Which one of the following statements about tractor protection valves is not true?
a. It keeps air in the tractor in the event they trailer air leaks.
b. It is controlled by the trailer air supply valve in the cab.
c. When it closes it allows air to leak from the tractor lines.

94) In order to supply air to the trailer you must first:
a. Push in the tractor protection valve.
b. Pull out the Air supply valve.
c. Stop the engine so you can hear the brakes release.

95) You should not back a tractor under a trailer until the whole air system is?
a. Between 60 and 80 PSI.
b. At normal operating pressure.
c. Bled down to at least half the maximum pressure allowed.

96) How should you test the tractor semi trailer connection for security?
a. Pull gently forward in low gear against the locked trailer brakes, Then get out and look at the connection carefully.
b. Put the tractor in gear and pull ahead with a sharp jerk.
c. Rock back and forth with the trailer brakes locked.

97) Why should you be sure that the fifth wheel plate is greased as required?
a. To reduce heat and noise.
b. To prevent steering problems.
c. To ensure good electrical connections.

98) There are two things that a driver can do to prevent a roll over. They are1. Keep the cargo close to the floor as possible. And?
a. Make sure that the brakes are properly adjusted.
b. Keep the fifth wheel's free play as tight as possible.
c. Go slowly around corners.

99) The air leakage rate for a combination vehicle, engine off and the brakes on, should not be more than __ PSI per minute.
a. 2
b. 3
c. 4

100) In normal driving, some drivers use the hand valve before applying the foot brake to prevent a jackknife. Which of these is true?
a. It results in less skidding than using the brake pedal alone.
b. It should not be done.
c. It is the best to brake and keep the tractor and trailer in a straight line.

101) Why would you lock the tractor glad hands or dummy connectors together when you are not towing a trailer.
a. If you didn't, you could never build up system pressure.
b. The connected brake circuit would become a back up system for the trailer.
c. It will keep dirt and moisture from getting in the brake lines.

102) The front trailer supports are up and the trailer is resting on the tractor. Make sure?
a. There is enough clearance between the tractor frame and the landing gear.
b. There is enough clearance between the tops of the tractor tires and the nose of the trailer.
c. Both a & b.

103) The driver crosses the air lines when hooking up to an old trailer built before 1974. What might happen?
a. If the trailer doesn't have spring brakes, you can drive away, but you will not have trailer brakes.
b. The brake pedal will work the trailer spring brakes instead of the air brakes.
c. The hand valve will apply the tractor brakes instead of the trailer brakes.

104) You are bob tailing and have a major air leak in the service line and you put on the brakes. Service air pressure will escape and cause the
a. Trailer tank pressure to be lost.
b. Trailer emergency brakes to activate.
c. The tractor spring brakes to come on when the pressure drops below 40 PSI.

105) Air lines on a combination vehicle are often colored to keep them from getting connected wrong. The emergency line is __ and the service line is __.
a. Red, Blue
b. Blue, Red
c. Black and Red

106) The hand valve should be used?
a. To test the trailer brakes.
b. Only when the trailer is fully loaded.
c. Only with foot brake applied.

107) Which of these statements is true.
a. Light vehicles need more braking power to stop than heavy ones
b. Always delay braking a vehicle until the very last minute.
c. Bob tail tractors can take longer to stop than a fully loaded combination vehicle.

108) The air leakage rate for a combination vehicle with engine off and brakes off is __ psi per minute.
a. 1.
b. 3.
c. 2.
Combination Vehicles – Practice Test – Answers

1) C  
2) B  
3) D  
4) A  
5) B  
6) D  
7) C  
8) A  
9) D  
10) A  
11) D  
12) C  
13) A  
14) A  
15) A  
16) B  
17) C  
18) C  
19) A  
20) B  
21) D  
22) B  
23) B  
24) A  
25) C  
26) B  
27) C  
28) B  
29) B  
30) C  
31) B  
32) C  
33) A  
34) A  
35) B  
36) D  
37) B  
38) C  
39) B  
40) A  
41) C  
42) A  
43) B  
44) A  
45) B  
46) A  
47) B  
48) B  
49) A  
50) A  
51) A  
52) A  
53) A  
54) B  
55) A  
56) A  
57) B  
58) A  
59) C  
60) B  
61) A  
62) B  
63) A  
64) C  
65) A  
66) B  
67) C  
68) A  
69) A  
70) C  
71) C  
72) B  
73) B  
74) C  
75) B  
76) C  
77) C  
78) B  
79) B  
80) C  
81) A  
82) A  
83) B  
84) C  
85) B  
86) C  
87) B  
88) C  
89) B  
90) C  
91) A  
92) A  
93) C  
94) A  
95) B  
96) A  
97) B  
98) C  
99) C  
100) B
Commercial Driver's License – Endorsements

Doubles and Triples

In This Section
If you need a doubles / triples endorsement, you will need to study this section and take the doubles / triples endorsement exam in addition to the Combination Vehicles Endorsement exam.

Inspecting Doubles and Triples
Remember, that there is a lot more to inspect on a combination vehicle than on a single vehicle-more wheels, tires, lights, reflectors, etc. There are also some new things to check.

Coupling System, Landing Gear and Double/Triple Trailers
Check the lower fifth wheel
- Mounting to the frame should be secure.
- Check to be sure there are no missing or damaged parts.
- Be sure there is enough grease.
- You should not see space between the upper and lower fifth wheel.
- Locking jaws should be around the shank, not the head of the kingpin.
- The release arm should be properly seated and the safety latch/lock engaged.

Check the upper fifth wheel
- Be sure the glide plate is securely mounted to the trailer frame.
- Be sure that the kingpin is not damaged.

Check the sliding fifth wheel
- There should not be any damaged or missing parts.
- It should be properly greased.
- All locking pins should be present and locked in place.
- If air powered, there should be no air leaks.
- Check that the fifth wheel is not so far forward that the tractor frame will hit the landing gear or that the cab will hit the trailer during turns.

Check the air and electric lines to the trailer
- Be sure that the electrical cord is plugged in and secured.
- Air lines should be properly connected to the glad hands. You should not have air leaks. Air lines should be secured with enough slack for turns.
- All lines should be free from damage.

Check the landing gear
- Be sure that the landing gear is fully raised. Check for missing, bent or damaged parts.
- Make sure the crank handle is in place and secured.
• If the landing gear is power operated, make sure that there are no air or hydraulic leaks.

**Inspect the double and triple trailers**
Make sure that all shut-off valves are in the right position. Shut-off valves are located at the rear of the trailer and in the service and emergency lines. Shut-off valves should be open/closed as follows:

1. Shut-off valves at the rear of the front trailers should be open.
2. Shut-off valves at the rear of the last trailer should be closed.
3. Converter dolly air tank drain valve should be closed.
4. Be sure the air lines are supported and glad hands are properly connected.
5. If the spare tire is carried on the converter dolly, make sure it's secured.
6. Make sure the pintle hook is latched. The pintle hook locks one trailer to another.
7. Make sure that the safety chains are secured to the trailers.
8. Be sure light cords are firmly in the sockets on the trailers. The light cords run from the battery and operate the lights.

**Air Brakes**
Make these checks in addition to the pre-trip checks that you make for your air brakes. Check the air brakes on a double or triple trailer the same way you check them for any combination vehicle.

**Be sure air flows to all trailers**
1. Use the tractor parking brake or chock the wheels to hold the vehicle.
2. Wait for the air pressure to reach normal, then push the red trailer air supply knob. This will send air to the emergency (supply) lines.
3. Use the trailer handbrake to send air to the service line.
4. Go to the back of the last trailer. You should hear air escaping. This shows that the entire system is charged.
5. Close the emergency line valve.
6. Be sure that either the trailer handbrake or the service brake pedal is on. Open the service line valve to check that service pressure goes through all trailers. Then, close the valve. If you do not hear air escaping from both lines, be sure that the shut-off valves on the trailer(s) and dolly(s) are open. You must have air all the way to the back of all the brakes to work.

**Test the tractor protection valve**
1. Charge the trailer air brake system. Build up normal air pressure and push in the trailer air supply knob.
2. Turn off the engine.
3. Step on the brake pedal several times to reduce air pressure in the tanks.
4. When the air pressure falls into the pressure range specified by the manufacturer (usually within the range of 20 to 40 psi), the trailer air supply control should pop out or go from the normal position to the emergency position. The trailer air supply control may also be called the tractor protection valve control.
5. If the tractor protection valve doesn't work right, an air hose or trailer brake lead could drain all the air from the tractor. This would cause the emergency brakes to come on and you could lose control.
**Test the trailer emergency brakes**
1. Charge the trailer air brake system and check that the trailer rolls freely.
2. Stop and pull out the trailer air supply control (tractor protection valve control or trailer emergency valve) or place it in the emergency position.
3. Pull the trailer gently with the tractor to be sure that the trailer emergency brakes are on.

**Test the trailer service brakes**
1. Check for normal air pressure.
2. Release the parking brakes and move the vehicle forward slowly.
3. Apply trailer brakes with the hand control (trolley valve).
4. You should feel the brakes come on. This tells you that the trailer brakes are connected and working.

*Note:* The trailer brakes should be tested with the hand valve. In normal operation, however, control the trailer brakes with the foot pedal. The foot pedal applies air to the service brakes at all wheels.

**Coupling and Uncoupling Doubles and Triples**
Coupling and uncoupling is basic to the safe operation of combination vehicles. Wrong coupling and uncoupling can be dangerous. The makes and models of rigs are different. So, learn the details of coupling and uncoupling the trucks that you will operate.

**Coupling Twin Trailers**

**Secure the second (rear) trailer**
If the second trailer doesn't have spring brakes, drive the tractor close to the trailer. Connect the emergency line and charge the trailer air tank. Disconnect the emergency line.
If the slack adjusters are set correctly, this will set the trailer emergency brakes. If you aren't sure about the trailer brakes, chock the wheels.

**Couple the tractor and first semi-trailer**
To couple the tractor and first semi-trailer, follow the steps in Section 3: Combination Vehicles.

*CAUTION:* The semi-trailer with the heaviest load should be behind the tractor. The lighter trailer should be in the rear.

**Definition:** A converter gear or dolly is a coupling device with one or two axles and a fifth wheel. It is used to couple a semi-trailer to the rear of a tractor-trailer combination, forming twin trailers.

**Position the converter dolly in front of the second (rear) trailer**
- Release the dolly brakes by opening the dolly air tank petcock. If the dolly has spring brakes, use the dolly parking brake control.
- If it isn't too far, wheel the dolly into position by hand. Line it up with the kingpin.
- Or, use the tractor and first semi-trailer to pick up the converter dolly.
- Position the combination (tractor and first semi-trailer) as close as possible to the converter dolly.
- Move the dolly to the rear of the first semi-trailer and couple it to the trailer.
• Lock the pintle hook.
• Secure the dolly support in the raised position.
• Pull the dolly into position as close as possible to the nose of the second semi-trailer.
• Lower the dolly support.
• Unhook the dolly from the first trailer.
• Wheel the dolly into position in front of the second trailer in line with the kingpin.

Connect the converter dolly to the front trailer
• Back the first semi-trailer into position in front of the dolly tongue.
• Hook the dolly to the front trailer.
• Lock the pintle hook.
• Secure the converter gear support in the raised position.
• Be sure that the trailer brakes are locked or that the wheels are chocked.
• Make sure the trailer height is correct. It must be slightly lower than the center of the fifth wheel so that the trailer is raised slightly when the dolly is pushed under it.
• Back the converter dolly under the rear trailer.
• Raise the landing gear slightly off the ground to prevent damage if the trailer moves.
• Test the coupling by pulling against the pin of the rear semi-trailer.
• Make a visual check of the coupling.
• Make sure that there is no space between the upper and lower fifth wheel. If there is, something is wrong.
• Make sure the fifth wheel jaws have closed around the shank of the kingpin.
• Connect the safety chains, air hoses and light cords.
• Close the converter dolly air tank petcock and shut-off valves at the rear of the second trailer. The service and emergency line shut-off valve at the rear of the second trailer should be closed.
• Open the shut-off valves at the rear of the first trailer and on the dolly.
• Raise the landing gear.
• Charge the trailers’ air supply.
• Push in the trailer air supply knob.
• Check for air at the rear of the second trailer by opening the emergency line shut-off valve.
• If there is no air pressure there, something is wrong and the brakes won’t work.

Uncoupling Twin Trailers
Uncoupling the rear trailer
• Park the rig in a straight line on firm level ground.
• Apply the parking brakes so that the rig won’t move.
• Chock the wheels on the second trailer if it doesn’t have spring brakes.
• Lower the landing gear of the second trailer enough to remove some weight from the dolly.
• Close the air shut-off valve at the rear of the first trailer and on the dolly.
• Disconnect all dolly air and electric lines and secure them.
• Release the dolly brakes.
• Release the converter dolly fifth wheel latch.
• Slowly pull the tractor, first trailer and dolly forward to pull the dolly from under the second trailer.

**Uncouple the converter dolly**
• Lower the dolly landing gear.
• Disconnect the safety chains.
• Apply the converter gear spring brakes or chock the wheels.
• Release the pintle hook on the first trailer.
• Slowly pull clear of the dolly.

**Caution:** Never unlock the pintle hook with the dolly still under the rear trailer. The dolly tow bar could fly up. This could cause injury and would make it very difficult to re-couple.

**Coupling and uncoupling Triple Trailers**
**Couple the second and third trailers**
Couple second and third trailers using the method of coupling doubles.
Uncouple the tractor and pull away from the second and third trailers.

**Couple the tractor and first trailer to the second and third trailers**
Couple the tractor to the first trailer. Move the converter dolly into position and couple the first trailer to the second trailer using the steps outlined for coupling doubles. The triple rig is now complete.

**Uncouple the triple rig**
• Uncouple the third trailer by pulling out the dolly. Then unhitch the dolly using the steps outlined for uncoupling doubles.
• Uncouple the rest of the rig the same way you would uncouple a double-bottom rig. Follow the steps already outlined.

**Pulling Double/Triple Trailers**
**Prevent roll-overs**
Double and triple tractor-trailer combinations are less stable than other commercial vehicles. Therefore, steer gently and go slowly around curves, corners and on-and off ramps. Remember, a safe speed on a curve for a straight truck or a single trailer combination vehicle may be too fast for a set of double or triple trailers.

**Beware of the crack-the-whip effect**
Doubles and triples are more likely to turn over than other combination vehicles because of the crack the whip effect. You must steer gently when pulling trailers. The last trailer in a combination is the most likely one to turn over.

**Look ahead**
You must drive doubles and triples very smoothly to prevent a rollover or jackknife. Therefore, look far ahead so you can slow down or change lanes gradually if necessary.

**Manage your space**
Doubles and triples take up more space than other commercial vehicles. They are longer and also need more space because you cannot turn or stop them suddenly.
Allow more following distance.
Make sure you have large enough gaps before entering or crossing traffic.
Be sure you are clear on the side before you change lanes.

**Be even more careful in adverse conditions**
In bad weather, slippery conditions or when driving in the mountains, you must be very careful when driving doubles and triples.
Commercial Drivers License
Doubles and Triples Test - Practice

Introduction

This study guide contains ninety one commercial drivers license doubles and triples test questions and answers. These questions and answers were written by professional authors with extensive knowledge and experience in the transportation industry. This study guide was designed to help drivers pass the commercial drivers license doubles and triples endorsement exam. The questions pertained in this study guide are not the actual questions that will appear on the commercial drivers license exam. It is unlawful to distribute the actual test questions found on the commercial drivers license exam.

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Doubles and Triples – Practice Test Questions

1) What is a converter dolly?
   a) A coupling device of one or two axles and a 5th wheel
   b) An axle that can be converted into a double 5th wheel
   c) A 5th wheel that can couple two axles together
   d) A device used to convert a 5th wheel into a dolly

2) Do converter dollies have spring brakes?
   a) Yes
   b) No
   c) Some do, some don’t

3) What is one method you use to secure a second trailer before coupling?
   a) Have someone hold it in place
   b) Hook up the emergency line
   c) Use wheel chocks
   d) Chain the trailers together

4) How do you check to make sure trailer height is correct before coupling?
   a) Check both mirrors
   b) Raise landing gear completely
   c) Line trailers with top of a building
   d) Climb on top of first trailer

5) What do you check when making a visual check of coupling?
   a) Upper and Lower 5th wheel, air lines and electric lines
   b) Electric lines, air lines and trailer height
   c) Landing gear, trailer height and 5th wheel
   d) Tires, landing gear and trailer damage

6) What do you need to do before you supply air to the air tanks of the second trailer?
   a) Close shut off valves at rear of 1st trailer and open valves at rest of 2nd trailer
   b) Open shut off valves at rear of 1st trailer and close valves at rear of 2nd trailer
   c) Open shut off valves at rear of both trailers
   d) Close shut off valves at rear of both trailers

7) When visually checking the coupling of a converter dolly to the rear trailer, how much space should be between the upper and lower 5th wheel?
   a) You cannot visually check this coupling
   b) 1/2 to 3/4 inch
   c) None
   d) Depends on the load

8) If you disconnect the dolly from the front trailer while it is still under the rear trailer, what is likely to happen?
a) Nothing unless the rig rolls forward  
b) The dolly tow bar might fly up  
c) The air lines will rupture  
d) The trailer tanks will unlock  

9) What is the best way to be sure you supplied air to the rear trailer? 
a) Apply hand valve at 10 mph, it will stop in the same distance as one trailer at 5 mph with working brakes  
b) Watch for a 30 psi drop on the air gauge  
c) Open the hand valve with the rig parked  
d) Open the emergency line shut off on the rear trailer  

10) When pulling more than one trailer, which of these is True? 
a) The short trailer goes in front of the long one  
b) Make sure they are both the same weight  
c) The lightest trailer must be directly behind the tractor  
d) The heaviest trailer must be directly behind the tractor  

11) When is it OK to disconnect the steering axle brakes on the rig? 
a) When towing a trailer that has brakes  
b) When driving in very hilly areas  
c) When the road is slippery  
d) Never  

12) Which of the following is True? 
a) Rearward amplification may prevent the crack-the-whip effect from turning over all trailers  
b) Because of offtracking, it is easier to stop a triple bottom rig than to stop a 5 axle tractor semi-trailer  
c) A sudden steering movement may result in the rear trailer rolling over  
d) The longest combination vehicles are the least likely to roll over  

13) When should you check your mirrors when making a lane change?  
a) After completing the change  
b) Right after starting the lane change  
c) Before and after signaling the change  
d) All of these  

14) You are connecting a converter dolly to a second or third trailer. The trailer height is right when:  
a) The 5th wheel will be touching the trailer  
b) The kingpin will be resting on the 5th wheel  
c) The center of the kingpin will be lining up with the locking jaws  
d) The trailer will be raised slightly when the dolly is backed under it  

15) Which of the following is True?  
a) Use only the hand valve to stop empty trucks  
b) Always downshift while stopping an empty truck  
c) Empty trucks might have less traction due to bouncing and wheel lock up  
d) Empty trucks require shorter stopping distances than full trucks  

16) With the hand valve applied, you should test trailer brakes by opening the service line valve at the rear of the last trailer. When this is done, you should hear:
a) Nothing  
b) Air escaping from the open valve  
c) The service brakes slowly move to the fully applied  
d) The emergency line valve open and release air

17) Which of the following is True?  
a) Many drivers do not look far enough ahead when driving  
b) Good drivers shift their attention back and forth, near and far  
c) At highway speeds, you should look ahead at least 1/4 mile  
d) All of these

18) You are pulling doubles. You must make a quick stop to avoid a crash.  
You should:  
a) Use only trailer brakes  
b) Use light, steady pressure on the pedal  
c) Use controlled or stab braking  
d) Slam the pedal as hard as you can

19) Which of the following is True about converter dollies?  
a) They usually need a glad hand converter  
b) They have little braking power because they are small  
c) They often do not have spring brakes  
d) All of these

20) How much driving distance must you maintain in front of you when driving in a rainstorm, at 12 noon?  
a) One car length for every 10 mph  
b) One second more than the space needed in normal conditions  
c) Much more space is needed than in normal conditions  
d) The same amount of space as you need at night

21) One rule that applies to all vehicle skids is...In order to control the vehicle, you must:  
a) Use stab or controlled braking  
b) Restore traction to the tires  
c) Countersteer  
d) Accelerate

22) When doing a walkaround inspection of a double or triple rig, you should be sure the converter dolly air tank drain valves are ______ and the pintle hook is ______.  
a) Closed: free  
b) Open: latched  
c) Closed: latched  
d) Open: free

23) When going down a long downgrade, what is the best way to keep your brakes from overheating?  
a) Get in proper gear, use engine braking and apply brakes firmly when safe speed is reached  
b) Use trailer brakes only  
c) The wind will keep the brakes cool  
d) Use the brake coolers
24) When driving a 100 ft double trailer combo at 35 mph on dry pavement, how much following distance should you maintain? (in seconds)
   a) 11
   b) 10
   c) 9
   d) 8

25) Before pulling clear of the converter dolly, you should release the hook on the first semi-trailer.
   a) True
   b) False

26) The dolly should always be at least 2 feet away from the nose of the trailer when coupling a second semi-trailer.
   a) True
   b) False

27) When performing an inspection on a 2 trailer rig, the shut off valves on the rear of the front trailers should be open.
   a) True
   b) False

28) To hook the dolly to the front trailer, you should lock the pintle hook and secure the converter gear support in a raised position.
   a) True
   b) False

29) You should chock the wheels before securing a second trailer to your rig.
   a) True
   b) False

30) When the full weight of a trailer is resting on a tractor, you should hit the landing gear only after turning more than 45 degrees.
   a) True
   b) False

31) You should pull the tractor forward while the trailer brakes are still locked to check that the trailer is locked onto the trailer.
   a) True
   b) False

32) When the full weight of a trailer is resting on a tractor, you should hit the landing gear only after turning more than 45 degrees.
   a) True
   b) False

33) You should pull the tractor forward while the trailer brakes are still locked to check that the trailer is locked onto the trailer.
   a) True
   b) False
34) You should use the trailer brakes to stop a skid.
   a) True
   b) False

35) If the dolly has air brakes, to release them you open the air tank petcock.
   a) True
   b) False

36) Double trailers jackknife more easily when loaded.
   a) True
   b) False

37) You check for air at the rear of the second trailer by opening the emergency line shut
    off.
   a) True
   b) False

38) You should brake a little more firmly when going through a curve, while pulling double
    trailers.
   a) True
   b) False

39) When inspecting double trailers, the shut off valves at the rear of the last trailer should
    be open.
   a) True
   b) False

40) If the second trailer does not have spring brakes, in order to set the trailer emergency
    brakes, you should drive the tractor close to the trailer air tank and disconnect the
    emergency line.
   a) True
   b) False

41) You should release dolly brakes before disconnecting the dolly air and electric lines
    when uncoupling the rear trailer.
   a) True
   b) False

42) The trailer should be slightly lower than the center of the 5th wheel.
   a) True
   b) False

43) You should never unlock the pintle hook with the dolly still under the rear trailer.
   a) True
   b) False

44) When properly coupled, there should be no space between the upper and lower 5th
    wheel.
   a) True
   b) False
45) The converter dolly should be positioned in front of the second trailer and in line with the kingpin.
   a) True
   b) False

46) When pulling two trailers, always position the heaviest trailer to the rear of the combination.
   a) True
   b) False

47) The crack the whip effect that troubles trucks with trailers. Which is most likely to tip over?
   a) Any trailer
   b) The rear trailer of a triple
   c) A full trailer behind a truck
   d) The rear trailer of a double

48) When does the "driver's manual" advise disconnecting the steering axle brakes to help keep the rig straight?
   a) Never
   b) When the road is slippery
   c) Any time you have to

49) If a converter dolly is still under the second trailer and you unlock the pintle hook, what will probably happen?
   a) Nothing, the weight of the trailer will keep it in place
   b) The trailer brakes will unlock
   c) The air lines will rupture
   d) The dolly tow bar may fly up

50) Which of these statements about quick steering movements and doubles / triples is true?
   a) Doubles / triples flip over from quick steering moves more easily than many other vehicles
   b) Doubles / triples are no problem with a quick steering move
   c) You should put on the brakes at the same time you perform quick steering movements
   d) Countersteering is easier with doubles / triples than with most other vehicles

51) Driving a truck with double or triple trailers requires a driver to
   a) Allow more following distance than for smaller vehicles
   b) Use special care in bad weather and mountain conditions
   c) Allow more following distance than for smaller vehicles AND Use special care in bad weather and mountain conditions
   d) None of these

52) You should be sure the trailer height is correct before connecting a converter dolly to a second or third trailer. If the trailer height is correct:
   a. It will be slightly lower than the center of the fifth wheel.
   b. The king pin will be resting on the fifthwheel.
   c. It will be three inches above the center of the fifthwheel.
   d. The center of the fifthwheel will line up with the locking jaws.
53) The safety catch for the fifthwheel locking lever must be ___ for a coupling to be complete.
   a. Behind the locking lever.
   b. Under the locking lever.
   c. Over the locking lever.
   d. Through the locking lever.

54) After you charge the trailer tanks, check that the air lines are not crossed and the trailer brakes are working properly by:
   a. Depressing the brake pedal.
   b. Turning on the parking brake from the cab.
   c. Apply and release the, trailer brakes.
   d. None of the above.

55) You have charged the trailer air tanks. You should not move the vehicle until the air system is:
   a. At normal pressure.
   b. Bled down to half of the normal pressure.
   c. Between 60 psi and 80 psi.
   d. Built up to twice the normal pressure.

56) When carrying doubles with unequal weight, The heaviest load should be in the:
   a. Front trailer.
   b. Rear trailer.
   c. Never carry unequal loads.
   d. None of the above.

57) The landing gear is up and the trailer is resting on the tractor. Be sure there is enough clearance between:
   a. The tops of the tractor tires and the nose of the trailer.
   b. The tractor frame and the landing gear.
   c. The landing gear and the ground.
   d. All of the above.

58) You are driving at night and you must dim your headlights from high to low. What should you do with your speed?
   a. Slow down.
   b. Speed up.
   c. Drop 5 MPH until your eyes adjust.
   d. Nothing, how well you can see should not effect your speed.

59) You are driving a twin trailer rig at 50 MPH. Your rig is 100 feet long. Driving conditions are ideal (dry pavement, good visibility). What is the least amount of space that you should keep in front of your rig to be safe?
   a. 5 seconds.
   b. 9 seconds.
   c. 10 seconds.
   d. 11 seconds.

60) When should you use the trailer hand valve to park a combination vehicle?
   a. When you park at loading docks.
b. When parking on a grade.
c. Never use the hand valve for parking.
d. Always on level ground.

61) When inspecting double trailers, make sure the shut off valves are set as follows.
a. Rear of front trailers open, Rear of last trailer closed.
b. Rear of front trailers closed, rear of last trailer open.
c. Rear of front trailers open, rear of last trailer open.
d. Rear of front trailers closed, rear of last trailer closed.

62) You should be sure the trailer height is correct before connecting a converter dolly to a second trailer. If the trailer height is correct:
a. It will be slightly lower than the center of the fifth wheel.
b. The kingpin will be resting on the fifth wheel.
c. The center of the kingpin will line up with the locking jaws.
d. Landing gear is down.

63) You are coupling a semi trailer to your tractor but have not yet backed under. The trailer is at the right height when the:
a. Kingpin is about 1 1/4 inches above the fifth wheel.
b. End of the kingpin is even with the top of the fifth wheel.
c. Trailer is just below the middle of the fifth wheel.
d. Trailer is higher than the truck frame.

64) How much space should there be between the upper and lower fifth wheel?
a. At least 1/2 inch.
b. None.
c. About 1/4 inch.
d. About 1 inch.

65) After you lock the kingpin into the fifth wheel, Check the connection by:
a. Backing up with the trailer brakes released.
b. Pulling the tractor ahead sharply to release the trailer brakes.
c. Pulling the tractor ahead gently with the trailer brakes locked.
d. Look at fifth wheel slider.

66) When carrying doubles with unequal weight, the lightest load should be in the:
a. Rear trailer.
b. Front trailer.
c. Never carry unequal loads.
d. None of the above.

67) After connecting the air lines between the tractor and the trailer, but before backing under the trailer, you should:
a. Pull ahead to test the gladhands.
b. Supply air to the trailer system.
c. Make sure the trailer brakes are off.
d. Check the parking brake.

68) After completing the step in question # 16, what would you do next?
a. Pull ahead and continue with your trip.
b. back under the trailer.
c. Pull out the trailer air supply valve.
d. None of the above.

69) **If only the service line comes apart while you are driving, You will notice that:**
   a. The emergency tractor brakes will come on.
   b. The emergency trailer brakes will come on.
   c. Nothing happens until you try to use the brakes.
   d. Trailer air will exhaust.

70) **The landing gear is up and the trailer is resting on the tractor. Be sure there is enough clearance between:**
   a. The landing gear is totally up and secured.
   b. The tops of the tractor tires and the nose of the trailer.
   c. The tractor frame and the landing gear.
   d. All of the above.

71) **When pulling doubles or triples it is very important to remember:**
   a. That the stopping distance is much less than with an automobile.
   b. The stopping distance is much greater than a normal tractor semi-trailer.
   c. You don't have to slow down as much for curves as with an automobile.
   d. All of the above are correct.

72) **With the hand valve on, you should test the trailer brakes by opening the service valve at the rear of the trailer. When you do this, you should hear?**
   a. Air escaping from the open valve.
   b. The service brakes will slowly move to the fully applied position.
   c. The emergency line valve will open and release air.
   d. None of the above.

73) **Converter dollies:**
   a. Have little braking power because they are small.
   b. Often do not have spring brakes.
   c. Usually need a glad hand converter.
   d. All of the above.

74) **You are doing a walk around inspection of a double or triple trailer. You should be sure the converter dolly air tank drain valves are ___ and the pintle hook is ___**.
   a. Open, latched.
   b. Open, free.
   c. Closed, latched.
   d. Closed, free.

75) **When does the drivers manual advise disconnecting the steering axle brakes to help keep the vehicle straight.**
   a. When the roads is dry.
   b. Any time you have to.
   c. When the road is slippery.
   d. Never.

76) **You are visually checking the coupling of a converter dolly to the rear trailer. How much space should be between the upper and lower fifth wheel?**
   a. It depends on the road.
b. None.
c. ½ to ¾ of an inch.
d. 1/32 to 3/32 of an inch.

77) Which of these statements about quick steering movements and double / triple trailers is true.
a. Counter steering is easier with doubles / triples than with most other vehicles.
b. You should put on the brakes at the same time you perform quick steering movements.
c. Double /triple trailer have no problem with a quick steering movement.
d. Double / triple trailers flip over from quick steering movements.

78) Empty trucks:
a. May have poor traction due to bouncing and wheel hoping.
b. Stop in the same distance as a fully loaded vehicle.
c. Require shorter stopping distances than a full vehicle.
d. Are the easiest to stop since there is no cargo shifting.

79) If you want to couple a second trailer to your combination vehicle, secure it by using?
a. The trailer's spring brake and emergency air brake.
b. Wheel chocks.
c. Either of the above, if available.
d. None of the above.

80) Driving a truck with double or triple trailers require a driver to?
a. Do both b & c.
b. Use special care in bad weather and mountain driving,
c. Allow more following distance than for smaller vehicles.
d. None of the above.

81) If you must drive through deep puddles or flowing water, which os these should you not do?
a. Drive through quickly.
b. Use a lower gear.
c. Increase the engine RPM.
d. Take advantage of the water and let it wash your tires and wheels.

82) Some large trucks have large convex or spot mirrors.
a. They make things look smaller and farther away than they really are.
b. Do not need to be checked as often as flat mirrors because they show a large area.
c. Are against the law.
d. Make things look closer and larger than they really are.

83) Which of these statements is true about seeing ahead?
a. At highway speed you should be looking ¼ mile ahead of your vehicle.
b. Many drivers do not look far enough ahead of there vehicles.
c. Good drivers shift their attention back and forth, near and far.
d. All of the above.

84) When should you check your mirrors while making a lane change?
a. After signaling the change.
b. Right after starting the lane change.
c. After completing the lane change.
d. All of the above.

85) Which of these statements about managing space to the sides is true?
a. Always keep your vehicle to the right side of your lane.
b. You should avoid traveling next to other vehicles when possible.
c. High winds are not a problem for double triple trailers.
d. All of the above.

86) Which of these statements about handling of double / triples is true?
a. The rear trailer of a 100 foot triple is less likely to turn over than a single semi trailer due to the crack the whip effect.
b. A triple bottom vehicle can stop quicker than a 5 axle tractor semi trailer due to off tracking.
c. A sudden movement with the steering wheel can result in a tipped over rear trailer.
d. None of the above.

87) You should check the height of the trailer before connecting a converter dolly to a second or third trailer. The trailer height is right when?
a. The trailer will rise slightly when the converter dolly is backed under it.
b. The king pin rests on the fifth wheel.
c. The center of the king pin is lined up with the locking jaws of the fifth wheel.
d. All of the above.

88) You want to hook your combination to a second trailer that has no spring brakes. To do this without wheel chocks you should?
a. Make sure the trailer will roll freely when coupling.
b. Hook the trailer electric cord to a portable generator for braking power.
c. Supply air to the trailer system with the tractor and then disconnect the emergency line.
d. Couple the trailer to the tractor, everything is ok.

89) Which of these is not a good thing to do when driving on slippery roads?
a. Use the engine brake or retarder.
b. Use a light touch on the accelerator and the brake pedals.
c. Keep other traffic out of your side space.
d. None of the above.

90) Which of these will result in the best control on curves?
a. There is really no need to slow down for curves.
b. Downshift after you enter the curve.
c. Braking during the turn.
d. Slowing to a safe speed before entering the curve, then accelerate slightly during the curve.

91) Before you can supply air to the air tanks of a second trailer you need to?
a. Open the shut off valve at the rear of the first trailer and close the shut off valve at the rear of the second trailer.
b. Close the shut off valve at the rear of both trailers.
c. Open the shut off valve at the rear of both trailers.
d. None of the above.
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Commercial Driver's License – Endorsements

Tank Vehicles

In This Section
A tank vehicle is a vehicle used to carry any liquid or liquid gas in a tank of 1000 gallons or more. A portable tank is a bulk container that is not permanently attached to the vehicle.

Inspecting Tank Vehicles
In addition to the pre-trip inspection outlined in the General Knowledge section, you must inspect additional special items found on a tank vehicle. Since tank vehicles come in many types and sizes, check the vehicle's operator's manual to make sure you know how to inspect your tank vehicle. On all tank vehicles, however, leaks are the most important thing to check for.

- Don't carry liquids or gases in a leaking tank.
- When checking your vehicle, be sure to check the following:
  - Check the tank's body or shell for dents and leaks.
  - Check the intake, discharge and cut-off valves. Make sure the valves are in the correct position before loading, unloading or moving the vehicle.
  - Check the pipes, connections and hoses for leaks, especially around joints.
  - Check manhole covers and vents. Make sure the covers have gaskets and that they close correctly. Keep the vents clear so that they work correctly.

Check special purpose equipment.
If your vehicle has the following equipment, be sure it works:
  1. vapor recovery kits
  2. grounding and bonding cables
  3. emergency shut-off systems
  4. built-in fire extinguisher

Check the emergency equipment required for your vehicle. Find out what equipment you are required to carry and make sure you have it and know how it works.

Driving Tank Vehicles
Hauling liquids in tanks requires special skills because of the vehicle's high center of gravity and the movement of the liquid.

Tank vehicles have a high center of gravity
Because much of the vehicle's weight is carried high off the road, this makes the vehicle top-heavy and easy to roll over. Tankers carrying liquids are particularly easy to roll over. Tests have shown that tankers can turn over at the speed limits posted for curves. Take curves and on-ramp/off-ramp curves well below the posted speeds.

Watch out for liquid surge
Liquid surge results from the movement of liquid in partially filled tanks. For example, when you stop, the liquid will surge back and forth. When the wave hits the end of the tank, it tends to push the truck in the direction that the wave is moving. If the truck is on
a slippery surface such as ice, the wave can shove the stopped truck out into the intersection. When driving a tanker carrying liquid, you must be familiar with the vehicle’s handling.

Some tankers may have bulkheads or baffles to help control the liquid surge. However, unbaffled tanks, also known as smooth bore tanks, have nothing inside to slow down the flow of the liquid. Therefore, the forward and back surge can be very strong. Unbaffled tanks are usually those used to carry food products, such as milk. Sanitation regulations forbid the use of baffles because it is difficult to clean the inside of the tank. Therefore, be very cautious when driving smooth bore tanks. Start and stop slowly and smoothly.

**Watch out for side-to-side surge**
Baffled liquid tanks have bulkhead with holes that let the liquid flow between the smaller tanks. The baffles help control the forward/backward liquid surge; however, the liquid can still surge side-to-side. This can cause the vehicle to roll over.

**Distribute the weight evenly when loading your vehicle**
Some liquid tanks are divided into several smaller tanks by bulkheads. When loading and unloading the smaller tanks, pay attention to the weight distribution. Don't put too much weight on the front or rear of the vehicle.

**Never load a cargo tank totally full**
Liquids expand as they warm. This is called outage. You must leave room for the liquid to expand. Different liquids expand by different amounts and require different amounts of outage. You must know the outage requirement for the liquids that you haul.

**Know how full to load your vehicle**
A full tank of dense liquid, such as some acids, may exceed legal weight limits. Therefore, you may often only partially fill tanks with heavy liquids. The amount of liquid that you can load into a tank depends on:
- the amount that the liquid will expand during transit;
- the weight of the liquid; and,
- the legal weight limits.

**Safe Driving Rules**
**Drive smoothly**
Because your tank vehicle has a high center of gravity and because of liquid surge, you must start, slow down and stop very smoothly. You must also make smooth turns. Otherwise, your vehicle could roll over.

**Use controlled or stab braking**
If you must stop quickly to avoid a crash, use controlled or stab braking. Remember, if you steer quickly while braking, your vehicle could roll over.

**Slow down before curves**
Then, accelerate slightly through the curve. The posted speed for a curve may be too fast for a tank vehicle. Stay below the posted speed.
Maintain a safe stopping distance between you and the vehicle ahead
Remember, wet roads, double the normal stopping distance. Empty tank vehicles may
take longer to stop than loaded ones.

Don't over-steer, over-accelerate or over-brake
This could cause your vehicle to skid or roll over. If your drive wheels or trailer wheels
begin to skid, your vehicle may jackknife. If your vehicle starts to skid, take immediate
action to restore traction to the wheels.
Commercial Drivers License
Tank Vehicles Test - Practice

Introduction

This study guide contains seventy commercial drivers license tank vehicles test questions and answers. These questions and answers were written by professional authors with extensive knowledge and experience in the transportation industry. This study guide was designed to help drivers pass the commercial drivers license tank vehicles endorsement exam. The questions pertained in this study guide are not the actual questions that will appear on the commercial drivers license exam. It is unlawful to distribute the actual test questions found on the commercial drivers license exam.

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Tanker Vehicles – Practice Test Questions

1) If you lose your brakes driving a tanker, when should you use an escape ramp?
   a) Always
   b) Only if the tank has baffles
   c) Only when the tank is empty
   d) Never

2) Side to side surge can cause:
   a) Tank failure
   b) Rollover
   c) Over speeding
   d) Suspension system failure

3) Why should you know the outage needed for the liquids you carry?
   a) Delivery hose size depends on outage
   b) Some liquids expand more than others when they get warm
   c) Tank baffles are not always legal with outage
   d) You must unload some liquids at a faster rate than others

4) What should you do if you are driving a tank vehicle and need to stop quickly to avoid a crash?
   a) Use controlled or stab braking
   b) Only use the rear brakes
   c) Slam on the brake pedal and hold it down
   d) Use light steady pressure on the pedal

5) Which of the following can cause a vehicle to skid?
   a) Overacceleration
   b) Overbraking
   c) Oversteering
   d) All of these

6) Which of the following is important to remember when pulling a liquid or dry bulk tanker?
   a) Curves, exit and entrance ramps post speed limits that are safe for cars, but may not be safe for tankers
   b) Most tankers have a high center of gravity
   c) Tankers can roll over at the speed limits posted for cars
   d) All of these

7) Which of the following is a good rule to follow when using a fire extinguisher?
   a) Aim at the base of the fire
   b) Stay upwind of the fire
   c) Keep as close to the fire as possible
   d) Aim at the base of the fire and Stay upwind of the fire

8) Which of the following about emergency steering and tankers is True?
   a) Wrap your thumbs around the steering wheel before starting a quick steering movement
b) Do not apply the brakes when making a quick steering movement  
c) A tanker is easier to countersteer than most vehicles  
d) All of these  

9) Which fire can you use water to put out?  
a) Electrical  
b) Gasoline  
c) Tire  
d) None of these  

10) When you unload the smaller tanks of a tank with bulkheads, be careful to check your:  
a) Power usage  
b) Water content  
c) Air to fuel ratio  
d) Weight distribution  

11) Which of these should you remember in an emergency?  
a) Open the door and jump out  
b) Leaving the road is more risky than hitting another vehicle  
c) Heavy vehicles can turn more quickly than they can stop  
d) Stopping is always the safest action in an emergency  

12) You should be very cautious when driving smooth bore tanks. This is especially true when you are:  
a) Hauling milk or other food products  
b) Loading or unloading  
c) Starting or stopping  
d) Going up or downhill  

13) A "smooth bore tank" will  
a) Have more surge than a baffle tank  
b) Have less surge than a tank with bulkheads  
c) Have less surge than a baffle tank  
d) All tanks have the same amount of surge  

14) A smooth bore tank that is loaded to 50% capacity will:  
a) Have more surge  
b) Cause the vehicle to handle better  
c) Have the same amount of surge as one loaded to 100%  
d) Have less surge  

15) What should you do if you are driving a loaded tanker and you are exiting the highway using an offramp that curves downhill?  
a) Wait until you are in the turn before downshifting  
b) Come to a complete stop at the top of the ramp  
c) Slow to a safe speed before the turn  
d) Use the posted speed limit for the ramp  

16) A liquid tank with baffles can still have what kind of surge?  
a) Quick  
b) Front to back
c) Top to bottom
d) Side to side

17) Which of these is likely to occur if you are driving a tanker and the front wheels begin to skid?
a) The truck will stop in the shortest distance
b) The truck will roll over
c) Liquid surge will pull the tank from the truck
d) You will keep moving forward in a straight line no matter how much you steer

18) Which of the following must you consider when loading a cargo tank with liquid?
a) The weight of the fluid
b) The amount that the liquid will expand during transit
c) The weight limits in the states which you will be driving
d) All of these

19) How will a truck with a baffled cargo handle on the road?
a) The same as a tanker without baffles
b) It will feel like the tank is not hooked onto the truck
c) There will be less front to back surge than tanker with baffles
d) The truck will seem very heavy

20) Normal surge is:
a) Bottom to top
b) Front to back and side to side
c) Back to front
d) Front to back

21) It is best to keep the center of gravity:
a) Low
b) Missing
c) Wide
d) High

22) What difference in handling can you expect in a tank with bulkheads?
a) The bulkheads have no effect on handling
b) It will feel like the tank is not hooked onto the truck
c) Less front to front surge than with smooth bore tanks
d) It will seem very heavy

23) What will liquid surge do to the handling of a tank vehicle?
a) Can move the vehicle in the same direction the liquid moves
b) Can make the vehicle handle better
c) Will increase the wind resistance
d) Will make the vehicle go faster

24) Why is it important to know the outage needed for the liquids?
a) Some of the heaviest liquids do not need any
b) Some liquids expand more when they get warm
c) Tank baffles are not always legal with baffles
d) Liquids must be unloaded at a faster rate than others
25) **What is liquid surge caused by?**
a) Hydroplaning  
b) Movement of the vehicle on wet pavement  
c) Movement of the liquid in the tank  
d) Movement of the fuel in the fuel tanks

26) **Too much weight on the steering axle can cause hard steering.**
a) True  
b) False

27) **Baffles divide a tank into several smaller tanks.**
a) True  
b) False

28) **Starting and stopping with a smooth bore tank requires extra caution.**
a) True  
b) False

29) **It is not important to know the outage of bulk liquids.**
a) True  
b) False

30) **A bridge formula permits less maximum axle weight for axles that are closer together.**
a) True  
b) False

31) **Dry bulk tank loads tend to have a high unstable center of gravity.**
a) True  
b) False

32) **Too much weight on the driving axle is likely to cause poor traction.**
a) True  
b) False

33) **The driver is only responsible for an overloaded vehicle if he loaded it himself.**
a) True  
b) False

34) **Forward and backward surge is especially high in tanks that are not baffled.**
a) True  
b) False

35) **Dense liquids are likely to exceed legal weight if the tank is fully loaded.**
a) True  
b) False

36) **Tank vehicles are usually top heavy.**
a) True  
b) False

37) **Bulkheads reduce the importance of weight distribution.**
38) Always leave room for expanding liquids when loading a tank.
   a) True
   b) False

39) Sanitation regulations forbid the use of baffled tanks to transport food products.
   a) True
   b) False

40) Baffled tanks control side to side surge.
   a) True
   b) False

41) Surging is less dangerous in poor driving conditions.
   a) True
   b) False

42) Baffled tanks have bulkheads with holes in them.
   a) True
   b) False

43) Liquid surge tends to push the truck in the direction the liquid wave is moving.
   a) True
   b) False

44) Tankers can turn over at the posted speed limits on curves.
   a) True
   b) False

45) Tank vehicles have a high center of gravity.
   a) True
   b) False

46) A tank vehicle is a vehicle used to transport:
   a. Any liquid or liquefied gaseous material in a permanently attached tank.
   b. A portable tank having a capacity of 100 gallons or more.
   c. A tanker trailer for hauling liquids with baffles.
   d. All of the above.

47) Hauling liquids in tanks requires special skills because:
   a. Of the high center of gravity and liquid movement.
   b. Of low center of gravity and liquid movement.
   c. Of the special design of the trailers.
   d. Of the products they are designed to haul.

48) You must know the outage requirements when:
   a. Unloading a tanker.
   b. Loading a tanker.
   c. Hauling liquids in bulk.
49) The amount of liquid to load into a tanker depends on:
   a. The amount the liquid will expand.
   b. Weight of the liquid.
   c. Legal weight limits.
   d. All of the above.

50) Unbaffled tanks are used for hauling:
   a. Gas.
   b. Food products.
   c. Acids.
   d. Very heavy liquids.

51) Smooth bore tankers are more difficult to drive because?
   a. They only have two baffles.
   b. They have nothing to slow down the flow of the liquid.
   c. They only have bulkheads.
   d. There is a surge only when stopping.

52) Use of baffles are sometimes forbidden because:
   a. They are hard to clean when hauling acid.
   b. Of sanitations requirements.
   c. They will not meet outage requirements.
   d. None of the above.

53) Tests have shown that tankers will turn over at posted:
   a. Off ramp speed.
   b. On ramp speed.
   c. Speeds on highway curves.
   d. All of the above

54) Bulkheads are?
   a. Used to slow down the movement of liquids in transit.
   b. For hauling quantities of different amount in tanks.
   c. Used only when hauling food stuffs.
   d. Full of holes used for equalizing loads.

55) Liquid surge is most dangerous in tanks:
   a. With bulkheads.
   b. With baffles.
   c. Partially filled
   d. Loaded to full capacity.

56) Tanks that haul milk are:
   a. Baffles with holes.
   b. Bulkheads.
   c. Bulkheads with holes.
   d. Smooth bore tanks.

57) Because a tankers load is so high off the ground:
a. It will be top heavy.
b. It will have a high center of gravity.
c. It will roll over easily.
d. All of the above.

58) The person in charge of loading and unloading a cargo tank with hazardous material must be within __ feet of the tank?
   a. 5.
   b. 25.
   c. 50.
   d. 100.

59) Never park a tanker carrying explosives "A" or "B" within __ feet of the traveled part of the road:
   a. 5.
   b. 10.
   c. 25.
   d. 50.

60) Dense liquids may require that you only partially fill the tank. The amount of liquid to load into a tank depends on:
   a. Legal limits.
   b. The weight of the liquid.
   c. The amount the liquid will expand in transit.
   d. All of the above.

61) A portable tank mounted on a truck or trailer must be at least how many gallons to require you to have a tanker endorsement on your commercial drivers license?
   a. 100.
   b. 250.
   c. 500.
   d. 1000.

62) You are on level ground, why would you keep your foot on the brake pedal at a stop sign?
   a. So the vehicle won't roll backwards.
   b. So the vehicle won't roll forwards.
   c. Because the surge of the liquid in the tanks could cause the vehicle to move forward or backward.
   d. All of the above.

63) What is used to divide a large tank into several smaller tanks?
   a. Baffles.
   b. Smooth boring.
   c. Bulkheads.
   d. None of the above.

64) In what type of tank is the liquid surge the most noticeable?
   a. Smooth bore.
   b. Bulkhead.
   c. Baffled.
d. All of the above.

65) Liquids expand as they heat up. You as the driver must leave room for this expansion of the liquid. What is the term used to describe this expansion?
   a. Dry bulk.
   b. Surge.
   c. Smooth bore.
   d. Outage.

66) What is the major cause of surge?
   a. Poor driving habits.
   b. High center of gravity.
   c. Partially filled tanks.
   d. Mechanical failure.

67) Driving a tanker may require special equipment, it may include?
   a. Grounding cables.
   b. Vapor recovery systems.
   c. Emergency shut off systems.
   d. All of the above.

68) A tanker with a high center of gravity is preferred over a tanker with a low center of gravity.
   a. True.
   b. False.

69) A tank vehicle is described as a vehicle that is used to carry liquids or gases of __ gallons or more.
   a. 100.
   b. 500.
   c. 1000.
   d. 2000.

70) You are driving a tanker that is ¾ full. If you are forced to brake hard what can you expect to happen?
   a. The vehicle will be pushed forward by the liquid surge.
   b. The vehicle will be pushed backwards by the liquid surge.
   c. The vehicle will be pushed forward and then backward by the liquid surge.
   d. The vehicle will be pushed backward and then forward by the liquid surge.
## Tanker Vehicles – Practice Test – Answers

1. A  
2. B  
3. B  
4. A  
5. D  
6. D  
7. D  
8. B  
9. C  
10. D  
11. C  
12. C  
13. A  
14. A  
15. C  
16. D  
17. D  
18. D  
19. C  
20. B  
21. A  
22. C  
23. A  
24. B  
25. C

26. A  
27. B  
28. A  
29. B  
30. A  
31. A  
32. B  
33. B  
34. A  
35. A  
36. A  
37. B  
38. A  
39. A  
40. B  
41. B  
42. A  
43. A  
44. A  
45. A  
46. A  
47. A  
48. D  
49. D  
50. B

51. B  
52. B  
53. D  
54. A  
55. C  
56. D  
57. D  
58. B  
59. A  
60. D  
61. D  
62. D  
63. C  
64. A  
65. D  
66. C  
67. D  
68. B  
69. C  
70. C
Commercial Driver's License – Endorsements

Hazardous Materials

In This Section
The Hazardous Materials Section is designed to help drivers understand the role and responsibilities of hauling hazardous materials. You must have a commercial driver license (CDL) with a hazardous materials endorsement before driving vehicles carrying hazardous materials which require placards. You must pass a written test about the regulations and requirements to get this endorsement.

Compliance with Federal motor carrier safety regulations.
"...a motor carrier or other person to whom this part is applicable must comply with the rules in parts 390 through 397, inclusive, of this subchapter when he/she is transporting hazardous materials by a motor vehicle which must be marked or placarded in accordance with § 177.823 of this title."

Hazardous Materials Definition
Hazardous materials (HAZMAT OR HM) pose a risk to health, safety and property during transportation. Hazardous materials include explosives, various types of gas, solids, flammable and combustible liquids and other materials. Because of the risks involved, government at all levels regulates the transportation of hazardous materials and requires CDL drivers to be at least 21 years of age.

Federal regulations require training and testing for all drivers involved in transporting hazardous materials. Your employer or a designated representative is required to provide this training and testing. Hazardous materials employers are required to keep a record of that training on each employee as long as that employee is working with hazardous materials, and for 90 days thereafter. The regulations require that hazardous materials employees be trained and tested at least once every two years.

The regulations also require that drivers have special training before driving a vehicle transporting certain flammable gas materials or highway route controlled quantities of radioactive materials. In addition, drivers transporting cargo tanks and portable tanks must receive specialized training. Each driver's employer or their designated representative must provide such training.

HAZMAT endorsements are not transferable from state to state.
Hazardous materials are categorized into nine major hazard classes. There are also two categories for consumer products and combustible (flammable) liquids. The following chart shows the classes and categories and gives examples of materials in each one.

In order to obtain a hazardous materials endorsement on your CDL, you must pass the written endorsement test proving knowledge of hazardous materials. You will need to know how to identify hazardous materials, how to load and transport hazardous shipments and how to properly placard your shipment.
A material's **hazard class** reflects the risks associated with it. There are nine different hazard classes. The types of materials included in these nine classes are in the table below.

### Hazardous Materials – Hazard / Class / Division Table

<table>
<thead>
<tr>
<th>Class</th>
<th>Division</th>
<th>Name of Class or Division</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.1</td>
<td>Mass Explosives</td>
<td>Dynamite</td>
</tr>
<tr>
<td></td>
<td>1.2</td>
<td>Projection Hazards</td>
<td>Flares</td>
</tr>
<tr>
<td></td>
<td>1.3</td>
<td>Mass Fire Hazards</td>
<td>Display Fireworks</td>
</tr>
<tr>
<td></td>
<td>1.4</td>
<td>Minor Hazards</td>
<td>Ammunition</td>
</tr>
<tr>
<td></td>
<td>1.5</td>
<td>Very Insensitive</td>
<td>Blasting Agents</td>
</tr>
<tr>
<td></td>
<td>1.6</td>
<td>Extremely Insensitive</td>
<td>Explosive Devices</td>
</tr>
<tr>
<td>2</td>
<td>2.1</td>
<td>Flammable Gases</td>
<td>Propane</td>
</tr>
<tr>
<td></td>
<td>2.2</td>
<td>Non-Flammable Gases</td>
<td>Helium</td>
</tr>
<tr>
<td></td>
<td>2.3</td>
<td>Poisonous/Toxic Gases</td>
<td>Fluorine, Compressed</td>
</tr>
<tr>
<td>3</td>
<td>---</td>
<td>Flammable Liquids</td>
<td>Gasoline</td>
</tr>
<tr>
<td>4</td>
<td>4.1</td>
<td>Flammable Solids</td>
<td>Ammonium Picrate, Wetted White Phosphorus</td>
</tr>
<tr>
<td></td>
<td>4.2</td>
<td>Spontaneously Combustible</td>
<td>Sodium</td>
</tr>
<tr>
<td></td>
<td>4.3</td>
<td>Spontaneously Combustible When Wet</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5.1</td>
<td>Oxidizers</td>
<td>Ammonium Nitrate</td>
</tr>
<tr>
<td></td>
<td>5.2</td>
<td>Organic Peroxides</td>
<td>Methyl Ethyl Ketone Peroxide</td>
</tr>
<tr>
<td>6</td>
<td>6.1</td>
<td>Poison (Toxic Material)</td>
<td>Potassium Cyanide</td>
</tr>
<tr>
<td></td>
<td>6.2</td>
<td>Infectious Substances</td>
<td>Anthrax Virus</td>
</tr>
<tr>
<td>7</td>
<td>---</td>
<td>Radioactive</td>
<td>Uranium</td>
</tr>
<tr>
<td>8</td>
<td>---</td>
<td>Corrosives</td>
<td>Battery Fluid</td>
</tr>
<tr>
<td>9</td>
<td>---</td>
<td>Miscellaneous Hazardous Materials</td>
<td>Polychlorinated Biphenyls (PCB)</td>
</tr>
<tr>
<td>None</td>
<td>---</td>
<td>ORM-D (Other Regulated Material-Domestic)</td>
<td>Food Flavorings, Medicines</td>
</tr>
<tr>
<td>None</td>
<td>---</td>
<td>Combustible Liquids</td>
<td>Fuel Oil</td>
</tr>
</tbody>
</table>
An extensive background check will be required for anyone who wishes to obtain the hazardous materials endorsement. For a complete list of offenses that will prevent you from obtaining the hazardous materials endorsement, please contact your local DMV.

**Hazardous Materials Regulations**
The Code of Federal Regulations gives regulations for hazardous materials. These regulations are located in title 49, parts 171-180. You will hear these regulations referred to as 49 CFR 171-180.

The Hazardous Materials Table in the regulations includes a list of hazardous materials. However, this table does not show all hazardous materials. A material is considered hazardous based on its characteristics. A shipper decides if a product meets the definition of a hazardous material in the regulations.

Because the federal regulations change often, be sure that your copy is up to date. You may get a copy from your local Government Printing Office bookstore and various publishers. Union or company offices often have copies for drivers to use.

**Intent of the Federal Regulations**
Transporting hazardous materials can be risky. Federal regulations tell you how to contain the material and communicate the risk. They also assure safe drivers and equipment.

The intent of regulations is to contain the material, communicate the risk and to assure safe drivers and equipment. To communicate the risk shippers must warn drivers and others about the materials hazards.

**Things to remember when transporting hazardous materials:**
- Packaging rules tell shippers how to package the materials safely. They also tell drivers how to load, transport and unload the material.
- To communicate the risk, shippers use hazard warning labels and markings on packages. They also provide shipping papers, emergency response information and placards. These labels and papers communicate the hazard to the shipper, carrier and the driver.

To assure safe drivers, anyone who transports hazardous materials must have a commercial driver's license (CDL) and a hazardous materials endorsement. To pass the test for the hazardous materials endorsement, a driver must know how to:
- Identify hazardous materials;
- Safely load shipments;
- Placard a vehicle in accordance with federal regulations;
- Safely transport shipments.

Learn the regulations and follow them. Following the regulations reduces the risk of injury from hazardous materials. Taking shortcuts and breaking the rules is unsafe and could be deadly. Additionally, drivers who violate the regulations can be fined and put in jail.

Inspect your vehicle before and during each trip. Police may stop and inspect your vehicle. When stopped, they may check your shipping papers, vehicle placards, the
hazardous materials endorsement on your driver's license and your knowledge of hazardous materials.

**Licensing and Endorsements**
You must have a commercial driver's license (CDL) with a hazardous materials endorsement to drive a vehicle carrying hazardous materials that requires placards. You must pass a written test to get this endorsement.

However, this is just the beginning. You can learn more by reading the federal and state regulations for hazardous materials and by attending training courses.

**Training Requirements**
Hazardous materials courses are usually offered by your employer, colleges, universities and associations. In fact, the federal regulations require training and testing for all drivers who transport hazardous materials. You must be trained and tested at least once every 3 years. Your employer must provide this training and testing. Your employer must also keep a record of the training completed by each employee who works with hazardous materials.

Federal regulations also require that drivers receive special training before driving a vehicle transporting certain flammable gas materials or highway/route-controlled radioactive materials. Drivers transporting cargo tanks and portable tanks must also receive specialized training. Your employer must provide this training.

**Permits**
The majority of states and some localities require registrations or permits to transport hazardous material or subsets of such materials. States and counties may also require drivers to follow special hazardous materials routes. The federal government may require permits or exemptions for special hazardous materials cargo such as rocket fuel. Find out about permits, exemptions and special routes for the places that you drive.

**Transporting Hazardous Materials - The Key Players**
The shipper sends hazardous products from one place to another by truck, rail, ship or airplane.

**The shipper:**
1. Uses hazardous materials regulations to determine the product's:
   - proper shipping name
   - hazard class
   - identification number
   - correct packaging
   - correct label and markings
   - correct placards

2. Prepares products for shipping:
   - packages, marks and labels all materials
   - prepares shipping papers
   - provides emergency response information
   - supplies placards
The shipper then certifies on the shipping paper that the shipment has been prepared according to federal regulations. If you are pulling cargo tanks supplied by you or your employer, the certification statement is not required.

The carrier is a person or company engaged in the transportation of passengers or property as a for-hire or private carrier.

**The carrier:**
- Takes the shipment from the shipper to its destination
- Refuses improper shipments
- Reports accidents and incidents involving hazardous materials to the proper government agency

The driver safely transports the shipment without delay.

**The driver:**
- Makes sure the shipper has identified, marked and labeled the hazardous materials
- Refuses leaking packages and shipments
- Placards his vehicle when loading, if required
- Follows all regulations about transporting hazardous materials
- Keeps the hazardous material shipping papers and emergency response information in the proper place

**Definitions**
A shipping paper describes the hazardous materials being transported. Shipping papers include shipping orders, bills of lading and manifests.

After an accident or hazardous materials accident or spill, you may be injured and unable to tell others about your hazardous cargo. Firefighters and police can prevent or reduce the amount of damage and injury if they know about the hazardous materials you are carrying. Your life and the lives of others could depend on quickly locating hazardous materials shipping papers.

Shippers must describe hazardous materials correctly and include an emergency response telephone number on the shipping papers. Carriers and drivers must tab hazardous materials shipping papers or keep them on top of other shipping papers. They must also keep the emergency response information with the shipping papers.

Drivers must keep hazardous materials shipping papers:
- In a pouch on the driver's door, or
- In clear view within immediate reach while the driver's seat belt is fastened, or
- On the driver's seat when the driver is out of the vehicle or in a pouch on the driver's door.

Package labels are diamond-shaped hazard warning labels found on most hazardous materials packages. These labels inform others of the hazard. If the diamond label does not fit on the package, shippers may put the label on a tag attached to the package. For example, compressed gas cylinders often have tags or decals.
Placards warn others of hazardous materials. They are placed on the outside of the vehicle and identify the hazard class of the cargo. A placarded vehicle must have at least 4 identical placards. Placards must be readable from all four directions. Therefore, they are put on the front, rear and both sides of the vehicle.

Placards measure 10 ¾ inches square and are turned in a diamond shape. Cargo tanks and other bulk packaging display the identification number of their contents on placards. Or they may use orange panels or white diamond-shape displays the same size as placards.

Lists of Regulated Products
Shippers, carriers and drivers use three lists to identify hazardous materials. The Hazardous Materials Table in the federal regulations
1. Appendix A to the Hazardous Materials Table—the List of Hazardous Substances and Reportable Quantities, and
2. Appendix B to the Hazardous Materials Table—the List of Marine Pollutants

Before transporting a material, look for its name on these three lists. Some materials may be on all lists. Others may be on only one.

The Hazardous Materials Table shows each material's shipping name, hazard class, ID number, packaging group and required labels. The illustration below shows part of the table.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Hazardous materials descriptions and proper shipping names</th>
<th>Hazard class or Division</th>
<th>Identification Numbers</th>
<th>Packing Group</th>
<th>Labels required (if not excepted)</th>
<th>Special provisions</th>
<th>(6) Packaging authorizations (§ 173.***</th>
<th>Exemptions</th>
<th>Non-bulk packaging</th>
<th>Bulk packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Poisonous, solids, self-heating, n.o.s. ...</td>
<td>0.1</td>
<td>UN3124</td>
<td>I</td>
<td>POISON, SPONTANEOUSLY COMBUSTIBLE</td>
<td>A5</td>
<td>None</td>
<td>211</td>
<td>241</td>
<td></td>
</tr>
</tbody>
</table>

Column 1 tells which shipping mode(s) the entry affects and other information concerning the shipping description. The next five columns show each material's shipping name, hazard class or division, identification number, packaging group, and required labels.
Five different symbols may appear in Column 1 of the table:

(+) Shows the proper shipping name, hazard class, and packing group to use, even if the material doesn't meet the hazard class definition.

(A) Means the hazardous material described in Column 2 is subject to the HMR only when offered or intended for transport by air unless it is a hazardous substance or hazardous waste.

(W) Means the hazardous material described in Column 2 is subject to the HMR only when offered or intended for transportation by water unless it is a hazardous substance, hazardous waste, or marine pollutant.

(D) Means the proper shipping name is appropriate for describing materials for domestic transportation, but may not be proper for international transportation.

(I) identifies a proper shipping name that is used to describe materials in international transportation. A different shipping name may be used when only domestic transportation is involved.

Column 2 lists the proper shipping names and descriptions of regulated materials. Entries are in alphabetical order so you can more quickly find the right entry. The table shows proper shipping names in regular type. The shipping paper must show proper shipping names. Names shown in italics are not proper shipping names.

Column 3 shows a material's hazard class or division, or the entry "Forbidden." Never transport a "Forbidden" material. You placard shipments based on the quantity and hazard class. You can decide which placards to use if you know these three things:
  1. Material’s hazard class.
  2. Amount being shipped.
  3. Amount of all hazardous materials of all classes on your vehicle.

Column 4 lists the identification number for each proper shipping name. Identification numbers are preceded by the letters “UN” or “NA.” The letters “NA” are associated with proper shipping names that are only used within the United States and to and from Canada.

The identification number must appear on the shipping paper as part of the shipping description and also appear on the package. It also must appear on cargo tanks and other bulk packaging. Police and firefighters use this number to quickly identify the hazardous materials.

Column 5 shows the packing group assigned to a material.

Column 6 shows the hazard warning label(s) shippers must put on packages of hazardous materials. Some products require use of more than one label due to a dual hazard being present. No label is needed where the table shows the word NONE.

Column 7 lists the additional (special) provisions that apply to this material. When there is an entry in this column, you must refer to the federal regulations for specific information.
**Column 8** is a three-part column showing the section numbers covering the packaging requirements for each hazardous material.

**Note:** Columns 9 and 10 do not apply to transportation by highway.

**The List of Hazardous Substances and Reportable Quantities**  
The DOT and the EPA want to know about spills of **hazardous substances**. They are named in the List of Hazardous Substances and Reportable Quantities.

Column 3 of the list shows each product's reportable quantity (RQ). When these materials are being transported in a reportable quantity or greater in one package, the shipper displays the letters RQ on the shipping paper and package. The letters RQ may appear before or after the basic description. You or your employer must report any spill of these materials which occurs in a **reportable quantity**.

<table>
<thead>
<tr>
<th>Hazardous Substance</th>
<th>Synonyms</th>
<th>Reportable Quantity (RQ) Pounds (Kilograms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenyl mercaptan @</td>
<td>Benzinethiol, Thiofenol</td>
<td>100 (45.4)</td>
</tr>
<tr>
<td>Phenylmercuric acetate</td>
<td>Mercury, (acetato-0) phenyl, Thiourea, phenyl</td>
<td>100 (45.4)</td>
</tr>
<tr>
<td>N-Phenylthiourea</td>
<td>Phosphorodithioic acid, O,O-diethyl S-(ethylthio), methyl ester</td>
<td>10 (4.54)</td>
</tr>
<tr>
<td>Phorate</td>
<td>Carbonyl chloride, Hydrogen Phosphide</td>
<td>100 (45.4), 5000 (2270)</td>
</tr>
<tr>
<td>Phosgene</td>
<td></td>
<td>10 (4.54)</td>
</tr>
<tr>
<td>Phosphine</td>
<td></td>
<td>100 (45.4)</td>
</tr>
<tr>
<td>Phosphoric acid</td>
<td></td>
<td>5000 (2270)</td>
</tr>
<tr>
<td>Phosphoric acid, diethyl 4-nitrophenyl ester</td>
<td></td>
<td>100 (45.4)</td>
</tr>
<tr>
<td>Phosphoric acid, lead salt</td>
<td></td>
<td>1 (0.454)</td>
</tr>
</tbody>
</table>

This would mean when transporting Phosgene – a spill of 10 pounds or more must be reported. 10 pounds is the reportable quantity for Phosgene.
Shipping Paper
A shipping paper for hazardous materials must include:

- Page numbers if the shipping paper has more than one page. The first page must show the total number of pages. For example, "page 1 of 4."
- A proper shipping description for each hazardous material. See below for a list of items in the shipping description.
- A shipper's certification signed by the shipper. This certification states that the shipper prepared the shipment according to the federal regulations.

If the shipping paper describes hazardous and non-hazardous products, the hazardous materials will be:

1. described first, or
2. highlighted in a contrasting color, or
3. identified by an X placed before the shipping name in a column labeled HM. If a reportable quantity is present in one package, the letters RQ may be used instead of X.

Shipping description
The shipping description for a hazardous material includes (in this order):

1. the proper shipping name
2. hazard class or division
3. the identification number and
4. the packing group-the group is displayed in Roman numerals (for example, I, II, III). The numerals may be preceded by the letters PG.

Definition: A hazard class indicates the general nature of the hazard. Within some classes, divisions exist to indicate additional hazards. For example, Class 2 covers all compressed gases.

Within Class 2:
Division 2.1 = Flammable Gas
Division 2.2 = Nonflammable Gas
Division 2.3 = Poison Gas

Shipping name, hazard class and ID number must not be abbreviated unless authorized in the federal regulations.

The description must also show:

- The total quantity of each hazardous product and the unit of measure (for example, pounds). Total quantity must appear before or after the basic description. The packaging type and unit of measure may be abbreviated. For example: 10 ctns. Paint, 3, UN1263, PG II, 500 lbs.
- The letters RQ if a reportable quantity is present,
- The name of the hazardous substance if the letters RQ appear,
- For n.o.s. (not otherwise specified) and generic descriptions, the technical name of the hazardous material must be shown. For example, weed killer is a generic name. The technical name is paraquat.
The shipper of hazardous wastes must put the word WASTE before the name of the material on the shipping paper (hazardous waste manifest).

For example, Waste Acetone, 3, PGII, UN1090, PG II

```
SHIPPING PAPER

TO: Wafers R US
68 Valley Street
Silicon Junction, CA

FROM: Essex Corporation
5775 Dawson Avenue
Coleta, CA 93117

QTY RM DESCRIPTION WEIGHT

"RQ" means that this is a reportable quantity
1 cyl RQ Phosgene, 2,3, UN1076, Poison, Inhalation
Hazard, Zone A

25 lbs

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Shipper: Essex Corp
Per: Shultz
Date: 6/27/88

Carrier: Knuckle Bros.
Per: 
Date: 

SPECIAL INSTRUCTIONS: 24 Hr. Emergency Contact, Ed Shultz, 1-800-555-5555
```

You may not use a hazard class or ID number to describe a non-hazardous material. Shippers must list an emergency response telephone number on the shipping paper. The number can be used by emergency workers to get information about any hazardous materials involved in a spill or fire.

Shippers must also provide emergency response information to the motor carrier for each hazardous material being shipped. The driver must carry this information. You must be able to use this information away from the motor vehicle and it must provide information on how to safely handle incidents involving the materials shipped. It must include the shipping name of the hazardous material and information about the risks of fire and explosion and risks to health. It must also include information about initial methods for handling fires, spills and leaks of materials.
The emergency information may be included on the shipping paper or another document that includes the basic description and technical name of the hazardous material. Or, it may be in a guidance book such as the Emergency Response Guide (ERG). The driver must provide the emergency response information to any federal, state or local authority responding to or investigating a hazardous materials incident.

**Certification Statement**

When the shipper packages hazardous materials, he certifies that the package has been prepared according federal regulations. The signed shipper's certification appears on the original shipping paper.

**Exceptions:** A shipper does not have to sign a certification statement if the shipper is a private carrier transporting its own product and the product will not be transported by another carrier. The shipper does not have to sign a certification statement if the material is transported in a cargo tank supplied by the carrier.

Unless a package is clearly unsafe, you may accept the shipper's certification concerning proper packaging. Some carriers have additional rules about transporting hazardous materials. Follow your employer's rules when accepting shipments.

**Package Markings and Labels**

Shippers print required markings directly on the package, an attached label or tag. The most important package marking is the name of the hazardous material. It is the same name as the one used on the shipping paper.

The shipper will put the following information on the package:

- The name and address of the shipper or consignee (the business or person to whom the shipment is being sent)
- The hazardous material's shipping name and identification number
- The labels required

If a reportable quantity or inhalation hazardous is being shipped, the shipper will also put RQ or INHALATION HAZARD on the package. Packages with liquid containers inside will have arrows pointing in the corrected upright direction. The labels used always reflect the hazard class of the product. Labels should appear near the proper shipping name.

**Recognizing Hazardous Materials**

Learn to recognize shipments of hazardous materials. To find out if the shipment includes hazardous materials, look for these clues:

1. An entry with a proper shipping name, hazard class and ID number.
2. A highlighted entry or one with an X or RQ in the hazardous materials column.
3. Look for other clues and ask:
   4. What business is the shipper in? Paint dealers, chemical suppliers, scientific supply houses, pest control or agricultural suppliers, explosives, munitions or fireworks dealers are all likely sources for hazardous materials.
   5. Do you see tanks with diamond labels or placards around the business?
6. What type of package is being shipped? Cylinders and drums are often used for hazardous materials shipments.
7. Is a hazard class label, proper shipping name and ID number on the package?
8. Does the package have handling precautions?
9. Hazardous Waste Manifest

**Hazardous Waste Manifest**
When transporting hazardous wastes, you must sign and carry a Uniform Hazardous Waste Manifest. The name and EPA identification number of the shippers, carriers and destination must appear on the manifest.

- Shippers must prepare, date and sign the manifest. Treat the manifest as a shipping paper when transporting the waste. Only give the waste shipment to a carrier with an EPA identification number or an EPA permitted treatment, storage or disposal facility.
- Each carrier/driver transporting the shipment must sign the manifest. After you deliver the shipment, keep your copy of the manifest. Each copy must have all needed signatures and dates. It must include the signature of the person to whom you delivered the waste.

**Placarding**
Attach the appropriate placards to the vehicle before you drive it. If you find that your vehicle is not placarded or placarded improperly, you may move it only during an emergency to protect life or property.

To decide which placards to use, you must know:
- The hazard class of the materials
- The amount of hazardous materials shipped
- The total weight of all hazardous materials in your vehicle

**Placard Tables**
There are two placard tables that tell you how to placard your vehicle. **Table 1** materials must be placarded whenever **any amount** is transported.

<table>
<thead>
<tr>
<th>IF YOUR VEHICLE CONTAINS ANY AMOUNT OF...</th>
<th>PLACARD AS...</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 .............................................................</td>
<td>EXPLOSIVE 1.1</td>
</tr>
<tr>
<td>1.2 .............................................................</td>
<td>EXPLOSIVE 1.2</td>
</tr>
<tr>
<td>1.3 .............................................................</td>
<td>EXPLOSIVE 1.3</td>
</tr>
<tr>
<td>2.3 .............................................................</td>
<td>POISON GAS</td>
</tr>
<tr>
<td>4.3 .............................................................</td>
<td>DANGEROUS WHEN WET</td>
</tr>
<tr>
<td>6.1 (PG 1, inhalation hazard only) ..........</td>
<td>POISON</td>
</tr>
<tr>
<td>7 (Radioactive Yellow III label only) ........</td>
<td>RADIOACTIVE</td>
</tr>
</tbody>
</table>
Except for bulk packaging, the hazard classes in Table 2 need placards only if the total amount transported is 1,001 pounds or more including the package. Add the amounts from all shipping papers for all the Table 2 products you have on board. You may use DANGEROUS placards instead of separate placards for each Table 2 hazard class when:

- You have 1,001 pounds or more of two or more Table 2 hazard classes, requiring different placards, and
- You have not loaded 5,000 pounds or more of any Table 2 hazard class material at any one place. (You must use the specific placard for this material.)

**CARD TABLE 2 - 1,001 POUNDS OR MORE**

<table>
<thead>
<tr>
<th>Category of Material (Hazard class or division number and additional description, as appropriate)</th>
<th>Placard Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.4</td>
<td>EXPLOSIVES 1.4</td>
</tr>
<tr>
<td>1.5</td>
<td>EXPLOSIVES 1.5</td>
</tr>
<tr>
<td>1.6</td>
<td>EXPLOSIVES 1.6</td>
</tr>
<tr>
<td>2.1</td>
<td>FLAMMABLE GAS</td>
</tr>
<tr>
<td>2.2</td>
<td>NON-FLAMMABLE GAS</td>
</tr>
<tr>
<td>3</td>
<td>FLAMMABLE</td>
</tr>
<tr>
<td>Combustible liquid</td>
<td>COMBUSTIBLE*</td>
</tr>
<tr>
<td>4.1</td>
<td>FLAMMABLE SOLID</td>
</tr>
<tr>
<td>4.2</td>
<td>SPONTANEOUSLY COMBUSTIBLE</td>
</tr>
<tr>
<td>5.1</td>
<td>OXIDIZER</td>
</tr>
<tr>
<td>5.2</td>
<td>ORGANIC PEROXIDE</td>
</tr>
<tr>
<td>6.1 (PG I or II, other than PG I inhalation hazard) ...</td>
<td>POISON</td>
</tr>
<tr>
<td>6.1 (PG III)</td>
<td>KEEP AWAY FROM FOOD</td>
</tr>
<tr>
<td>6.2</td>
<td>(NONE)</td>
</tr>
<tr>
<td>8</td>
<td>CORROSIVE</td>
</tr>
<tr>
<td>9</td>
<td>CLASS 9**</td>
</tr>
<tr>
<td>ORM-D</td>
<td>(NONE)</td>
</tr>
</tbody>
</table>

* FLAMMABLE placard may be used in place of a COMBUSTIBLE placard on a cargo tank or portable tank.
** Class 9 Placard is not required for domestic transportation.
If the words INHALATION HAZARD are on the shipping paper or package, you must display POISON placards in addition to any other placards needed by the product's hazard class.

Placards that identify the primary hazard class of a material must show the hazard class or division number in the lower corner of the placard. Placards that identify a secondary hazard class of a material may not show the hazard class or division number.

You may display a placard for a hazardous material, even if it is not required, as long as the placard identifies the hazard of the material being transported.

**Loading and Unloading Hazardous Materials**

**General Loading Requirements**

Do everything you can to protect containers of hazardous materials. Don't use tools which might damage containers or packaging during loading. Don't use hooks.

- Before loading or unloading, set the parking brake. Make sure the vehicle will not move.
- Many products become more hazardous when exposed to heat. Load hazardous materials away from heat sources.
- Watch for signs of leaking or damaged containers. Leaks spell trouble! Do not transport leaking packages. You, your truck and others could be in danger.
- Brace packages containing Class 1 (explosives), Class 3 (flammable liquids), Class 4 (flammable solids), Class 4 (flammable solids), Class 5 (oxidizers), Class 8 (corrosives), Class 2 (gases) and Division 6.1 (poisons) to prevent movement during transit.

No smoking! When loading or unloading hazardous materials, keep fire away. Don't let people smoke nearby.

Never smoke around:

- Class 1 (explosives)
- Division 2.1 (flammable gas)
- Class 4 (flammable solids)
- Class 5 (oxidizers)
- Class 3 (flammables)

Brace containers so they will not fall, slide or bounce during transit. Be careful when loading containers with valves or other fittings.

After loading, do not open any package during your trip. Never transfer hazardous materials from one package to another during the trip. You may empty a cargo tank, but do not empty any other package while it is on the vehicle.

**Cargo heater rules:** There are special cargo heater regulations for loading:

- Class 1 (explosives) Class 3 (flammable liquids) Division 2.1 (flammable gas)

These rules are found in the Code of Federal Regulations. The regulations generally forbid use of cargo heaters, including automatic cargo heating/refrigeration units. Unless you have read all the related regulations, do not load these products in a cargo space that has a heater.
Use closed cargo space: You cannot have overhang or tailgate loads of these materials:
Class 1 (explosives)
Class 4 (flammable solids)
Class 5 (oxidizers)

You must load these hazardous materials in a closed cargo space unless all packages are: fire and water resistant, or covered with a fire and water-resistant tarp.

Precautions for Specific Hazards
Explosives:
Turn off your engine before loading or unloading explosives. Then check the cargo space. You must:

- Disable cargo heaters. Disconnect heater power sources and drain heater fuel tanks.
- Make sure there are no sharp points that might damage cargo. Look for bolts, screws, nails, broken side panels and broken floor boards.
- Use a floor lining with Division 1.1, 1.2 or .1.3 explosives. The floors must be tight and the liner must be either non-metallic material or non-ferrous metal (metal that does not contain iron).
- Use extra care to protect explosives. Never use hooks or other metal tools. Never drop, throw or roll packages. Protect explosive packages from other cargo that might cause damage.

Do not transfer a Division 1.1, 1.2 or 1.3 explosive from one vehicle to another on a public roadway except in an emergency. If you must make an emergency transfer, set out red warning reflectors, flags or electric lanterns. You must warn others on the road. Never transport damaged packages of explosives. Do not take a package that shows dampness or an oily stain.

Do not transport Division 1.1 or 1.2 explosives in vehicle combinations or triples if:
A marked or placarded cargo tank is in the combination, or
The other vehicle in the combination contains:
- Division 1.1 A (initiating) explosives
- Packages of Class 7 (radioactive) materials labeled "Yellow III,"
- Division 2.3 (poisonous gas) or Division 6.1 (poisonous) materials
- Hazardous materials in a portable tank, a DOT Spec 106A or 110A tank.

Class 8 (corrosive) materials
If loading by hand, load breakable containers of corrosive liquid one by one. Keep them right side up. Do not drop or roll the containers. Load them on an even floor surface. Stack carboys only if the lower tiers can bear the weight of the upper tiers safely. (Carboys are portable tanks that may be metal or plastic and are placed in a special cage.)

Do not load nitric acid above any other product or stack more than 2 high. Load charged storage batteries so their liquid won't spill. Keep them right side up. Make sure other cargo won't fall against or short circuit them.

Never load corrosive liquids next to or above:
- Division 1.4
- Class 4 (flammable solids)
- Class 5 (oxidizers)
- Division 2.3, Zone B gases

**Never load corrosive liquids with:**
- Division 1.1 or 1.2
- Division 1.2 or 1.3
- Division 1.5 (blasting agents)
- Division 2.3, Zone A, gases
- Division 4.2 (spontaneously combustible materials)
- Division 6.1, PG1, Zone A (poison liquids)

**Class 2 compressed gases** including cryogenic liquids. Cryogenic liquids are liquids carried at very cold temperatures. See 49CFR177 for additional details.
If your vehicle doesn't have racks to hold cylinders, the cargo space floor must be flat. The cylinders must be:
- Held upright or braced laying down flat, or
- In racks attached to the vehicle, or
- In boxes that will keep them from turning over.

Division 2.3 (poisonous gas) or Division 6.1 (poisonous) materials
- Never transport these materials in containers with interconnections
- Never load a package labeled POISON or POISON GAS in the driver's cab, sleeper or with food material for human or animal consumption.

**Class 7 radioactive materials**
Some packages of Class 7 (radioactive) materials show a number called the transport index. The shipper labels these packages Radioactive II or Radioactive III and prints the package's transport index on the label.

Radiation surrounds each package and passes through all nearby packages. As a result, the number of packages you can load together is controlled. Their closeness to people, animals and exposed film is also controlled.

**Mixed loads**
The rules require some products to be loaded separately. You cannot load them together in the same cargo space. The table below lists some examples. The regulations (the Segregation and Separation Chart) name other materials you must keep apart.
Bulk packaging includes transport vehicles and freight containers.

A cargo tank is a bulk packaging which is:
a tank intended primarily for carrying liquids or gases and includes appurtenances,
reinforcements, fittings and closures.

For "tank" see 49 CFR 178.337-1 or 178-345-1 (c) permanently attached to or forms a
part of a motor vehicle. If it is not permanently attached to a motor vehicle, it is loaded or
unloaded without being removed from the motor vehicle, and, not made according to
specifications for cylinders, portable tanks, tank cars or multi-unit tank car tanks.
Portable tanks are bulk containers which are permanently attached to a vehicle. The
product is loaded or unloaded while the portable tanks are off the vehicle.
Many type of cargo tanks are in use. The most common cargo tanks are MC306/406 for
flammable liquids and MC331 for Bulk gases. Other liquid hazardous materials must be
transported in other types of specification tanks such as MC307/407 or MC312/412.

Markings
You must display the ID number of the hazardous materials in portable tanks, cargo
tanks and intermediate bulk packaging containers. ID numbers are shown in column 4 of
the Hazardous Materials Table. Federal regulations require black 100 mm
(3.9 inch) numbers on orange panels, placards or a white diamond-shaped background
if placards are not required.
Specification cargo tanks must show retest date markings.
In addition, portable tanks:

<table>
<thead>
<tr>
<th>DO NOT LOAD...</th>
<th>IN THE SAME VEHICLE WITH...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Division 6.1 or 2.3 (POISON or poison gas labeled material)</td>
<td>animal or human food unless the poison package is over-packed in an approved way. Foodstuffs are anything you swallow. However, mouthwash, toothpaste, and skin creams are not foodstuff.</td>
</tr>
<tr>
<td>Division 2.3 (poisonous) gas Zone A or Division 6.1 (poison liquids, PGI, Zone A</td>
<td>Division 5.1 (oxidizers), Class 3 (flammable liquids), Class 8 (corrosive liquids), Division 5.2 (organic peroxides), Division 1.1, 1.2, 1.3 (Class A or B) explosives, Division 1.5 (blasting agents), Division 2.1 (flammable gases), Class 4 (flammable solids).</td>
</tr>
<tr>
<td>Charged storage batteries</td>
<td>Division 1.1 (Class A Explosives).</td>
</tr>
<tr>
<td>Class 1 (Detonating primers)</td>
<td>any other explosives unless in authorized containers or packagings.</td>
</tr>
<tr>
<td>Division 6.1 (Cyanides or cyanide mixtures)</td>
<td>acids, corrosive materials, or other acidic materials which could release hydrocyanic acid from cyanides. For example: Cyanides, Inorganic, n.o.s. Silver Cyanide Sodium Cyanide</td>
</tr>
<tr>
<td>Nitric acid (Class 8)</td>
<td>other materials unless the nitric acid is not loaded above any other material and not more than two tiers high.</td>
</tr>
</tbody>
</table>
• Must show the lessee or owner's name.
• Must display the shipping name of the contents on two opposite sides.
• The letters of the shipping name must be at least 2 inches tall on portable tanks with capacities of more than 1,000 gallons and 1 inch tall on portable tanks with capacities of less than 1,000 gallons.
• The ID number must appear on each side and each end of a portable tank or other bulk packaging that holds 1,000 gallons or more.
• The ID number must appear on two opposite sides if the portable tank holds less than 1,000 gallons.
• The ID numbers must be visible when the portable tank is on the motor vehicle. If they are not visible, you must display the ID number on both sides and on both ends of the motor vehicle.
• If the identification numbers cannot be seen from outside the vehicle, additional numbers must be affixed to the exterior-front, rear and both sides.

Tank Loading and Unloading
The person in charge of loading and unloading a cargo tank must make sure a qualified person is always watching.

The person watching must:
1. Be alert.
2. Have a clear view of the cargo tank.
3. Be within 100 feet of the tank. (397.5 D 1)
4. Know the hazards of the materials involved
5. Know procedures to follow in an emergency
6. Be authorized and able to move the cargo tank

Close all manholes and valves before moving a tank of hazardous materials, no matter how small the amount in the tank or how short the distance. Manholes and valves must be closed to prevent leaks.

Flammable Liquids
• Turn off your engine before loading or unloading any flammable liquids.
• Run the engine only if you need it to operate a pump.
• Ground a cargo tank correctly before filling through an open filling hole.
• Ground the tank before opening the filling hole and maintain the ground until after you close the filling hole.

Compressed Gas
• Keep liquid discharge valves on a compressed gas tank closed except when loading and unloading.
• Run the engine only if you need it to operate a pump.
• If you run your engine, turn it off after transferring the product and before you unhook the hose.
• Unhook all loading/unloading connections before coupling, uncoupling or moving a chlorine tank.
• Always chock trailers and semi-trailers to prevent motion when uncoupled from the tractor or power unit.

Hazardous Materials Parking and Driving Rules
Parking with Division 1.1, 1.2 or 1.3 Explosives
Never park with Division 1.1, 1.2 or 1.3 explosives within 5 feet of the traveled part of the road.

Do not park within 300 feet of:

1. a bridge, tunnel or building
2. a place where people gather, or
3. an open fire.

If you must park, for example to refuel, be as quick as possible.
Do not park on private property unless the owner is aware of the danger. Someone must always watch the parked vehicle.

You may let someone else watch the vehicle only if it is:

1. on the shipper’s property
2. on the carrier’s property
3. on the consignee’s property

Safe Havens You may leave your vehicle unattended in a safe haven. A safe haven is an approved place for parking unattended vehicles loaded with explosives. Local or state and federal authorities identify areas for safe havens.

Parking a Placarded Vehicle Not Carrying Division 1.1, 1.2 or 1.3 Explosives
You may park a placarded vehicle (not carrying explosives) within 5 feet of the traveled part of the road only if your work requires it. Move the vehicle as soon as possible. Someone must always watch the vehicle when parked on a public road or shoulder.

1. Do not uncouple a trailer with hazardous materials and leave it on a public street.
2. Do not park within 300 feet of an open fire.

Attending Parked Vehicles
The person watching a placarded vehicle must:

- Be in the vehicle and awake. He cannot be in the sleeper berth.
- Or, the person must be within 100 feet of the vehicle and have it within clear view.
- Be aware of the hazards of the materials being transported.
- Know what to do in an emergency, and
- Be able to move the vehicle if needed.
- No Flares!

If you need to use warning devices, use reflective triangles or red electric lights. NEVER use burning signals, such as flares or fuses, around a:
Tank used for Class 3 (flammable liquids) or Division 2.1 (flammable gas) whether loaded or empty.

Vehicle loaded with Division 1.1, 1.2 or 1.3 explosives.
No Smoking!
Do not smoke while driving or within 25 feet of a placarded cargo tank used for Class 3 (flammable liquids) or Division 2.1 (gases).
Do not smoke or carry a lighted cigarette, cigar or pipe while driving or within 25 feet of any vehicle which contains:
- Class 1 Explosives
- Class 3 Flammable Liquids
- Class 4 Flammable Solids
- Class 5 Oxidizers

**Refuel with the Engine Off**
Turn off your engine before fueling a motor vehicle carrying hazardous materials. Someone must always be at the nozzle controlling the fuel flow.

**Carry a 10 B:C Fire Extinguisher**
The tractor or power unit or placarded vehicles must have a fire extinguisher with a UL rating of 10 B:C or more.

Make sure the extinguisher is fully charged.
Know how to operate it before you need it!

**Equipment for Chlorine**
A driver transporting chlorine in cargo tanks must have an approved gas mask in the vehicle. The driver must also carry an emergency kit for controlling leaks in the dome cover plate fittings on the cargo tank.

**Permit and Route Restrictions**
Most states and some localities require permits to transport hazardous materials and wastes. Rules about permits can change.

Make sure you have all the needed permits before you start.
Many states and localities have either route restrictions or designated routes for the transportation of hazardous materials. These restrictions and designations can change often.

If you work for a carrier, ask your dispatcher about route restrictions or permits. If you are an independent trucker and are planning a new route, check with agencies where you plan to travel. Some localities prohibit transportation of hazardous materials through tunnels, over bridges or other roadways. Check before you start.

Whenever you drive a placarded vehicle, avoid heavily populated areas, crowds, tunnels, narrow streets and alleys. Take other routes, even if they are more inconvenient. Never drive a placarded vehicle near open fires unless you can safely pass without stopping.

If you are carrying Division 1.1, 1.2 or 1.3 explosives:
You must have a written route plan and follow that plan.
Keep a copy of the plan with you while transporting the explosives.
Carriers prepare the route plan ahead of time and give the driver a copy.
You may plan the route yourself if you pick up the explosives somewhere other than at your employer's terminal. If you plan the route, write it out in advance and keep it with you while transporting the explosives. Deliver shipments of explosives only to authorized persons or leave them in locked rooms designed for explosives storage.

A carrier must choose the safest route to transport placarded radioactive materials. After choosing the route, the carrier must tell the driver about the radioactive materials and tell him the route plan. Where to keep shipping papers and emergency response information
Do not accept a hazardous materials shipment without a properly prepared shipping paper. A shipping paper for hazardous materials must always be easily recognized. Other people must be able to find it quickly after an accident. Put hazardous materials shipping papers on top of your stack of shipping papers or tab them so that they stand out from other papers.

When you are driving, keep shipping papers within your reach (with your seat belt on) or in a pouch on the driver's door. They must be seen easily by someone entering the cab. When you are not behind the wheel, leave the shipping papers in the driver's pouch or on the driver's seat. Emergency response information must be kept with the shipping paper.

**Papers for Division 1.1, 1.2 or 1.3 Explosives**
A carrier must give each driver transporting Division 1.1, 1.2 or 1.3 explosives a copy of Federal Motor Carrier Safety Regulations (FMCSR), Part 397. The carrier must also give the driver written instructions about what to do if the driver is delayed or in an accident.

These instructions must include:
- Names and telephone numbers of people to contact (including carrier agents or shippers).
- Information about the explosives being transported
- Information about what to do in emergencies such as fires, accidents or leaks.
- The driver must sign a receipt for these documents.

When you are driving, you must have and be familiar with the:
- shipping papers
- written emergency instructions
- written route plan
- a copy of FMCSR, part 397

Check your tires every 2 hours/100 miles
Make sure your tires are properly inflated before you begin your trip. Check placarded vehicles with dual tires at the start of each trip and when you park. You must stop and check the tires every 2 hours or 100 miles, whichever comes first. Use a tire pressure gauge to check the pressure. This is the only acceptable way to check pressure.

Do not drive with a tire that is leaking or flat except to the nearest safe place to fix it. Remove any overheated tire. Place it a safe distance from your vehicle. Don't drive until you correct the cause of overheating.

Follow the rules about parking and attending placarded vehicles. They apply even when you are checking, repairing or replacing tires.

**Stop before railroad crossings (392.10)**
Stop before a railroad crossing if your vehicle:
- is placarded
- carries any amount of chlorine
• is a cargo tank-empty or loaded-used for hazardous materials

✓ You must stop 15 to 50 feet before the nearest rail.
✓ Proceed only when you are sure that no train is coming.
✓ Don't shift gears while crossing the tracks.
Introduction

This study guide contains one hundred ten commercial drivers license hazmat test questions and answers. These questions and answers were written by professional authors with extensive knowledge and experience in the transportation industry. This study guide was designed to help drivers pass the commercial drivers license hazmat endorsement exam. The questions pertained in this study guide are not the actual questions that will appear on the commercial drivers license exam. It is unlawful to distribute the actual test questions found on the commercial drivers license exam.

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For Bonus Test Questions and Answers: please visit our bonus section online at www.CDLTest-Answers.com/bonus-cdl-test-answers.html
Hazardous Materials – Practice Test Questions

1) When transporting division 1.1 or 1.2 explosives, you must not?
a) Transport them in a combination vehicle if there is a placarded tank in the combination
b) Stop the vehicle until you reach your destination
c) Transport them in a combination vehicle consisting of
d) Both b and c

2) During a hazmat emergency, use every means to?
a) Warn others of the danger
b) Prevent smoking and keep open flames away
c) Keep everyone away
d) All of the above

3) How many times must you stop and check your dual tires while carrying hazardous materials?
a) Every 3 hours or 150 miles
b) Every 2 hours or 100 miles
c) Every 2 hours or 80 miles
d) Every 1 hour or 40 miles

4) You discover an overheated tire during an en route inspection. You must?
a) Remove the tire and place it far away from the vehicle
b) Lower the tires air pressure by at least 20 psi
c) Cool the tire and check it every 2 hours
d) Wait at least 2 hours before continuing your trip

5) If you are stopped at a truck stop, the shipping papers must be placed on the drivers seat or the?
a) Dashboard in clear view
b) On your person
c) Trailers paper pouch
d) Driver's door pouch

6) Who is responsible for checking that the shipper correctly named, labeled and marked a hazmat shipment?
a) DOT
b) Carrier
c) Manufacturer
d) Shipper

7) When fueling a placarded vehicle, someone must always be?
a) At the emergency power shut off for the pump
b) At the nozzle controlling the fuel flow
c) Watching the fueling from a safe distance
d) Within 10 feet of the pump with a fire extinguisher

8) Animal and foodstuffs must not be loaded in the same vehicle with?
a) Flammable gases
b) Poisons
c) Oxidizers
d) Explosives

9) You should stop before crossing a railroad grade if you are carrying _____ gallons of chlorine?
   a) Any amount
   b) 55
   c) 100
   d) 150

10) If you discover that one of your tires is leaking while carrying hazardous materials, you must?
    a) Report it to the DOT
    b) Report it to your carrier
    c) Stop at the nearest safe place and fix it
    d) Slow down and continue to check the tire every 25 miles

11) You are carrying 2000 pounds of corrosive. You may park within _____ feet of the road if your work requires it, for a very short period of time?
    a) 15
    b) 12
    c) 7
    d) 5

12) What is the largest allowable total transport index of all packages in a single vehicle allowed to be?
    a) 100
    b) 50
    c) 10
    d) 5

13) If the word "Forbidden" is written or typed in the hazard class column of any entry in the hazardous materials table:
    a) It may only be transported with an escort vehicle
    b) The product must never be larger than the RQ
    c) The product must never be transported
    d) The carrier may not open the package

14) When you are handling packages of explosives, you must:
    a) Never use hooks or metal tools
    b) Handle the packages carefully, no sharp motions
    c) Double wrap wet boxes to prevent staining
    d) Not use a forklift to move the package

15) Carriers are required to give each driver who transports Division 1.1 or Division 1.2?
    a) A list of rest stops a driver may use
    b) A copy of FMCSR, part 397
    c) The consignee's phone number
    d) An extra fire bottle
16) When you are transporting chlorine in cargo tanks, you must have:?
   a) An emergency kit for controlling leaks in fittings on the cover plate
   b) An approved gas mask
   c) Both a and b
   d) Either a or b, but not both

17) When shippers package hazardous materials, they must certify that this was
done according to the regulations. The one exception to this rule is?
   a) The trip will not cross a state line
   b) The shipper is a private carrier carrying their own product
   c) The driver is given a sealed cargo compartment
   d) The shipment is a hazardous waste

18) Which of the following is to be listed first on the shipping papers?
   a) The identification number
   b) The proper shipping name
   c) The hazard class
   d) It doesn't matter which appears first

19) Which emergency equipment may be used to warn of a stopped vehicle which
contains explosives?
   a) Fuses
   b) Flares
   c) Reflective triangles
   d) Signal flares

20) A liquid poison is spilling from your vehicle. If it can be done safely, how
should you channel the liquid?
   a) Away from streams or sewers
   b) Upwind
   c) Away from the vehicle
   d) Downwind

21) Before loading or unloading any explosive, you must check the cargo space
for?
   a) Loose floor boards or plates
   b) Sharp points that may damage the cargo
   c) A cargo heater that could start
   d) All of the above

22) If a vehicle carrying explosives strikes another object, you must not separate
the object until?
   a) Bomb experts have checked the explosives
   b) The explosives have been removed and placed at least 200 feet away
   c) A firefighting crew is standing by
   d) At least 30 minutes have passed

23) You may not smoke around any vehicle being loaded or unloaded with?
   a) Explosives
   b) Oxidizers
   c) Flammables
d) Any of these

24) A "W" in the first column of the hazardous materials table indicates?
   a) Water shipments that are not a RQ
   b) The rules apply only if the material is a waste
   c) A tank of water must always be in the same vehicle as this product

25) Which one of the following shipping paper descriptions for hazardous material is in correct order?
   a) Hexane, UN 1208, flammable liquid
   b) Corrosive material, hydrochloric acid, UN 1789
   c) UN 1787, corrosive material, hydrochloric acid
   d) Hydrogen bromide, non-flammable gas, UN 1048

26) What does the transport index of a radioactive material tell you?
   a) Lets the emergency response team ignore the ID number on the placard
   b) It is something only the consignee needs to know about
   c) The degree of control needed during transportation
   d) The weight of the material

27) If a hazardous material is leaking from your vehicle, you must not move your vehicle?
   a) Anymore than safety requires
   b) Off the roadway
   c) In any upwind direction
   d) Anymore than 500 feet

28) You may not park a vehicle carrying hazardous material anymore than _____ feet of an open fire?
   a) 400
   b) 300
   c) 200
   d) 100

29) A power unit of a placarded vehicle is required to have a fire extinguisher with a UL rating of _____ B:C or more?
   a) 20
   b) 15
   c) 10
   d) 5

30) Who is responsible for packaging, labeling and preparing the hazardous material shipping papers before shipping?
   a) State auditors
   b) Driver
   c) Shipper
   d) Carrier

31) If an "X" or "RQ" is written or typed into the HM column of a shipping paper entry, the?
   a) Entry is part of a partial shipment
b) Entry refers to the materials that must be top loaded
c) Material on that line is the largest part of the shipment
d) Shipment is regulated by hazmat regulations

32) The intention of the hazardous materials regulations are to ensure safe drivers and equipment, to communicate the risk, and?
a) To allow state enforcement
b) To contain the material
c) To tax shippers correctly
d) None of these

33) A hazard class name or ID number must not be used to describe a:?
a) Hazardous material
b) Hazardous waste
c) Reportable quantity of hazardous substance
d) Non-hazardous material

34) A vehicle placarded for hazardous material is required to have placards on how many sides of the vehicle?
a) 4
b) 3
c) 2
d) 1

35) There are 3 lists that drivers, shippers and carriers use to find out if a material is a regulated product. Which of these is one of them?
a) DOT Hazard Chart
b) Shippers List of Transportable Quantities
c) EPA Dangerous Materials Table
d) List of Hazardous Substances and Reportable Quantities

36) The intent of hazardous materials regulations is to ensure safe drivers, contain the material and hide the risk.
a) True
b) False

37) Containment rules tell drivers how to load, transport, and to unload bulk tanks of hazardous materials.
a) True
b) False

38) A vehicle placarded for hazardous material is required to have placards on how many sides of the vehicle?
a) 4
b) 3
c) 2
d) 1

39) When using parking or emergency brakes, what type of pressure is being used?
a) Air pressure
b) Spring pressure
c) Fluid pressure
d) None of these

40) Before transporting flammable cryogenic liquids, a driver must have had special training within the last 2 years.
   a) True
   b) False

41) You should stop and check your tires every 2 hours or 100 miles.
   a) True
   b) False

42) You must have a written route plan when transporting Division 1.1 explosives.
   a) True
   b) False

43) You can leave a placarded vehicle unattended if you are not within 100 feet of a public road.
   a) True
   b) False

44) Before pulling apart 2 vehicles carrying explosives that have been in a collision, you should move the explosives just enough to stabilize the load.
   a) True
   b) False

45) The driver should immediately clean up any leaking hazardous material he discovers.
   a) True
   b) False

46) The labels on hazardous materials packages are diamond shaped.
   a) True
   b) False

47) A shipment of hazardous materials is described by Hazardous Materials Transportation Papers.
   a) True
   b) False

48) The driver is responsible for keeping hazardous materials papers in the proper place.
   a) True
   b) False

49) An accident involving hazardous materials must be reported to the proper government agency by the shipper.
   a) True
   b) False
50) "Class 6" poisons must be transported in container with interconnectors.
a) True
b) False

51) The Transport Index tells which hazardous materials in the load being transported requires placards.
a) True
b) False

52) You should not load nitric acid in stacks more than 2 feet high.
a) True
b) False

53) When loading explosives, you must disconnect the cargo heaters.
a) True
b) False

54) A driver transporting chlorine in cargo tanks must have an approved gas mask in the vehicle.
a) True
b) False

55) You must stop 50 - 100 feet before the nearest rail of a railroad crossing when driving a placarded vehicle.
a) True
b) False

56) The power unit of placarded vehicles must have a fire extinguisher with a UL rating of 10 B:C or more.
a) True
b) False

57) Always use placards to transport any amount of material listed in table 2.
a) True
b) False

58) When transporting hazardous waste, you must sign and carry a Uniform Hazardous Waste Manifest.
a) True
b) False

59) The most important package marking is the name of the hazardous material.
a) True
b) False

60) The basic description of a hazardous product must always include the name of the hazardous material.
a) True
b) False
61) Regulated products appear on the Hazardous Materials Table and the Regulated Products Table.
   a) True
   b) False

62) Each item description on a shipping paper shows the materials hazard class.
   a) True
   b) False

63) A placarded vehicle must have placards on the front, rear and both sides.
   a) True
   b) False

64) You should keep your shipping papers describing hazardous materials in a pouch under the passenger seat.
   a) True
   b) False

65) If the words "Inhalation Hazard" appear on the shipping papers, you must use poison placards in addition to any others needed by the product.
   a) True
   b) False

66) To transfer class "A" & "B" explosives, a driver must have written instructions which include:
   a. Route plan.
   b. Names and telephone number to contact in an emergency.
   c. The nature of the explosive, and the actions to take in an emergency.
   d. All of the above.

67) When handling packages of explosives you must:
   a. Keep by standers at least 100 feet away.
   b. Roll the packages carefully with no sharp or jarring actions.
   c. Never use hooks or other metal tools.
   d. None of the above.

68) To find out if a shipment includes a hazardous product, you should:
   a. call your company.
   b. Open all packages and containers.
   c. Look at the shipping license.
   d. Look at the shipping papers.

69) A vehicle contains 500 lbs. each of explosive "A" & "B". Federal law requires that the vehicle be placarded with:
   a. No placards are required.
   b. Explosive "A" placards.
   c. Explosive "B" placards.
   d. Both A and B placards.

70) Who is responsible for checking that the shipper has correctly named, labeled and marked a hazardous materials shipment?
a. D.O.T.
b. Shipper.
c. Manufacturer.
d. Carrier.

71) What signals may be used to warn of a stopped vehicle which has a flammable liquid?
a. Flashlight.
b. Flares.
c. Fuses.
d. Reflective triangles

72) When hauling hazardous materials, you must stop your vehicle and check any dual tires at least once every ______ which ever comes first.
a. 1 hour or 100 miles.
b. 2 hours or 200 miles.
c. 2 hours or 100 miles.
d. 3 hours or 150 miles.

73) The basic description of a hazardous product must include the hazard class, the identification number, and its proper shipping name. Which of them must appear first on the shipping papers?
a. Customer certification.
b. The hazard class.
c. The proper shipping name.
d. The identification number.

74) When transporting radioactive material, the total transport index of all packages in a single vehicle must not exceed:
a. 5.
b. 50.
c. 10.
d. 15.

75) You are hauling 2000 pounds of phosphoric acid. You should not park within ___ feet of the traveled portion of the highway unless it is in the cause of normal operation for a brief period.
a. 5.
b. 10.
c. 12.
d. 15.

76) Your vehicle contains explosives, oxidizers, or flammables. No one may smoke within ___ feet.
a. 15.
b. 20.
c. 25.
d. 30.

77) When fueling a placarded vehicle, someone must always be.
a. Supervising the fueling operation.
b. At the nozzle, controlling the fuel flow.
c. At the emergency shut off for the pumps.
d. Close to the vehicle in case of an emergency.

78) You have a hazardous cargo and you are inspecting the vehicle. The shipping papers must be on the drivers seat in clear view or:
a. In the drivers door pouch.
b. With you.
c. On the dashboard in clear view.
d. On the steering wheel.

79) When transporting chlorine in cargo tanks, you must have:
a. Hazardous material shipping papers.
b. An approved gas mask.
c. An emergency kit for containing leaks in fittings on the dome cover plate.
d. All of the above.

80) A drivers dated certificate of radioactive materials training must be:
a. Certified by the D.O.T.
b. In the carriers files.
c. Red with the D.O.T. crest.
d. In the drivers immediate possession.

81) If hazardous materials is spilling from your vehicle, you must not move your vehicle:
a. Call your company.
b. More than 500 feet.
c. Off of the roadway.
d. More than safety allows.

82) Who is responsible for packaging, labeling, and preparing the hazardous material shipping papers for a common carrier?
a. Shipper.
b. Carrier.
c. Driver.
d. D.O.T.

83) If an entry on a shipping paper has bold, highlighted or printed in another color:
a. You must not load the material with food or medical supplies.
b. The material is a hazardous material.
c. The material is fragile and must be top loaded.
d. You must placard the vehicle.

84) The intent of the hazardous materials regulations has three parts. Two of these are to ensure safe drivers and equipment and to communicate the risk. What is the third?
a. To tax shippers correctly.
b. To contain the material.
c. To allow state enforcement.
d. None of the above.

85) Only one of these shipping paper descriptions is correct:
a. Hydrogen bromide non-flammable gas line 1048.
b. UN 1787 Corrosive material hydrochloric acid.
c. Corrosive material hydrochloric acid UN 1787.
d. Hexane UN 1208 flammable liquid.

86) The hazard class of a 2 liter bottle of material is flammable liquid. If the description also says poison inhalation hazard, how should you placard the vehicle?
a. Placard the vehicle poison only. No other hazardous material is present.
b. Placard with both poison and flammable.
c. Placard with poison and remove all other placards.
d. Do not placard the vehicle.

87) You may not park your vehicle within ___ feet of an open flame.
a. 200.
b. 300.
c. 500.
d. 400.

88) A vehicle that requires placards must display the placards:
a. Front of the vehicle.
b. Both sides of the vehicle.
c. Rear of the vehicle.
d. All of the above mentioned places on the vehicle.

89) You as the driver are allowed to smoke within how many feet of the vehicle if it is loaded with a flammable liquid.
a. 50 feet.
b. As the driver I can smoke around the vehicle.
c. I can smoke anywhere, but must keep all other people at least 50 feet away.
d. 25 feet.

90) If there is an RQ before or after the HEMS description on the shipping papers, The RQ means that:
a. The material has a value of more than $2500.00.
b. The material is in a package containing no other materials.
c. The materials are registered quality materials only.
d. The carrier must report any spills of this liquid.

91) If your vehicle is placarded, how do you handle rail road crossings?
a. Slow down to make sure there is nothing coming, then cross with caution.
b. Stop at least 100 feet from the nearest rail. Look both ways and proceed across the tracks as fast as you can.
c. Stop between 15 and 50 feet from the nearest rail. Look both ways, turn off all noise producing devices in the truck. When the tracks are clear, cross without shifting any gears.
d. Stop between 15 and 50 feet from the nearest rail. Look both ways, proceed across the tracks and call your dispatcher.

92) If the words Forbidden appears on the hazardous materials class column of an entry in the Hazardous materials table:
a. The carrier may not open the container or package.
b. A common carrier must never transport the product.
c. A shipment of that product must never be shipped in quantities greater than its RQ.
d. This type of shipment can never be shipped in quantities greater than its transport index allows.
93) If your vehicle is loaded with class "A" explosives, where can you park the vehicle?
   a. Anywhere, as long as the driver can see the load.
   b. Only in a safe haven.
   c. With-in 100 feet of the building as long as it can be seen in a straight line.
   d. It can never be left unattended by the driver.

94) Can you as a driver haul hazardous materials without having a hazardous materials endorsement on your CDL license?
   a. No.
   b. Yes as long as you don't get caught.
   c. Yes, if the amount of the hazardous material product does not exceed 2500 pounds.
   d. Yes, if the amount on your vehicle does not require placards.

95) What is the size of a hazardous materials label?
   a. 12 inches square.
   b. 10 ¾ inches square turned on end in a diamond.
   c. They can be any size.
   d. None of the above.

96) What is the size of a hazardous materials placard?
   a. 10 ¾ inches turned on end in a diamond.
   b. Any size.
   c. 12 inches square.
   d. None of the above.

97) Who has responsibilities for refusing shipment of leaking packages?
   a. Shipper.
   b. Carrier.
   c. Driver.
   d. All of the above.

98) Match the hazardous material with the proper class or division. White Phosphorus?
   a. Class 1.3
   b. Class 2.3
   c. Class 4.2
   d. Class 6.2

99) Match the hazardous material with the proper class or division. Uranium?
   a. Class 3
   b. Class 5
   c. Class 6
   d. None of the above.

100) What is the letter that states that a shipment has been prepared according to the rules?
    a. Form 172.101
    b. 49 CFR 171.180
    c. Shippers Certification.
    d. HMR 101
101) Who has the responsibility for determining the correct placards to use when shipping a hazardous material product?
   a. Shipper
   b. Carrier.
   c. Driver.
   d. None of the above.

102) Describe the non-flammable gas placard?
   a. White lettering and logo on an orange background.
   b. White lettering and logo on a yellow background.
   c. White lettering and logo on a green background.
   d. White lettering and logo on a red striped background.

103) Match the hazardous material with the proper class or division. Gasoline?
   a. Class 1
   b. Class 2
   c. Class 3
   d. Class 4

104) Match the hazardous material with the proper class or division. Battery acid.
   a. Corrosive.
   b. Combustible Liquid.
   c. Flammable Liquid.
   d. Oxidizers.

105) On a hazardous material placard, the class appears?
   a. In the left corner.
   b. In the right corner.
   c. In the top corner.
   d. In the bottom corner.

106) Which item should only be loaded into closed cargo spaces unless in fire/water resistant packaging and covered with a fire/water resistant tarp?
   a. Class 1.
   b. Class 4.
   c. Class 5.
   d. All of the above.

107) What type of fire extinguisher is required for placarded vehicle?
   a. A : B
   b. A : C
   c. B : C
   d. B :D.

108) B : C fire extinguishers are for what type of fires?
   a. Electrical and burning liquids.
   b. Use on burning wood, paper and cloth.
   c. Burning liquids only.
   d. All fires regardless of fuel.
109) The transportation of class "A" & "B" explosives requires a steel floor liner not less than 1/16 of an inch.
   a. True.
   b. False.

110) To determine the placard to use on your vehicle, you must know the:
   a. Materials hazard class.
   b. Amount being shipped.
   c. Amount of all materials of all classes on your vehicle.
   d. All of the above.
Hazardous Materials – Practice Test – Answers

1) A  26) C  51) B  76) C  101) A
2) D  27) A  52) A  77) B  102) C
3) B  28) B  53) A  78) A  103) C
4) A  29) C  54) A  79) D  104) A
5) D  30) C  55) B  80) D  105) D
6) B  31) D  56) A  81) D  106) D
7) B  32) B  57) B  82) A  107) C
8) B  33) D  58) A  83) B  108) A
9) A  34) A  59) A  84) B  109) B
10) C  35) D  60) A  85) A  110) D
11) D  36) B  61) B  86) B
12) B  37) B  62) A  87) B
13) C  38) A  63) A  88) D
14) A  39) B  64) B  89) D
15) B  40) A  65) A  90) D
16) C  41) A  66) D  91) C
17) B  42) A  67) C  92) B
18) B  43) B  68) D  93) B
19) C  44) B  69) B  94) D
20) A  45) B  70) D  95) D
21) D  46) A  71) D  96) A
22) B  47) B  72) C  97) C
23) D  48) A  73) C  98) C
24) A  49) B  74) B  99) D
25) D  50) B  75) A  100) C
Commercial Driver's License – Endorsements

Transporting Passengers

In This Section
The Transporting Passengers Section is designed to help drivers understand the role and responsibilities of transporting passengers commercially. Bus drivers must have a commercial driver license if they drive a vehicle designed to seat more than 15 persons, including the driver.

Bus drivers must have a passenger endorsement on their commercial driver license. To get the endorsement you must pass the general knowledge test and the transporting passengers endorsement exam. (If your bus has air brakes, you must also pass the air brakes endorsement exam). After completing the required written exams you must then pass the skills tests required for the class of vehicle you drive.

School Buses
To drive a school bus, you must be at least 18 years of age. You must also hold a valid commercial driver's license. Depending on the weight and size of the bus that you will drive, you will be issued a Class B or Class C license. Additionally you must have a passenger bus endorsement and a school bus endorsement on your CDL. School bus endorsements are not transferable from state to state.

If you plan to drive a school bus designed to carry fewer than 16 passengers, including the driver, you do not need to obtain a CDL, Class B or C, or the passenger bus endorsement. However, you must have the school bus endorsement on your driver's license. Therefore, you will need to take the school bus knowledge and skills tests. You will be restricted to driving buses designed to carry fewer than 16 passengers and this restriction will be printed on your license.

Operating the Bus Safely - Loading and Unloading Passengers

Turn on your school bus traffic warning lights
✓ You must turn on the warning lights before you stop to load or unload students.
✓ If the posted speed limit is less than 35 mph, turn on the warning lights at least 100 feet before the stop.
✓ If the posted speed is 35 mph or more, turn on the warning lights at least 200 feet before the stop.
✓ Do not use the warning lights except when loading and unloading
✓ **Extend the warning sign (stop arm) and crossing control arm.**
✓ Extend the warning sign and crossing control arm only when the bus is stopped to load and unload passengers.

When loading or unloading students:
- Do not use the emergency four-way hazard flashers.
- Stop in the right lane of the road.
- On divided highways, five lane roads where the middle lane is used for turning, or heavily traveled roads, unload the students on the side of the road where they live.
- Stop only when the bus can be seen clearly at a safe distance.
- Make sure all students are on the bus and seated before moving.
- Before backing the bus, make sure all students are on the bus and seated.
- When unloading, make sure all students are clear of the bus before moving. Most injuries occur when the bus is stopped to load or unload students.
- Never park the bus so that the emergency exit will be blocked while students are on board.

Report drivers who illegally pass a bus stopped to load or unload passengers. Make a note of:
1. the license plate number and state
2. the make, type and color of the vehicle
3. date, time and location of the incident

**Backing the Bus**
- Do not back the bus unless there is no other safe way to move the vehicle. Drive around the block or make a detour rather than backing the bus.
- Pick up passengers before backing or turning.
- Post a lookout on the inside, back of the bus to warn of obstacles, approaching persons or other vehicles.
- Check your mirrors constantly while backing.
- Unload passengers after backing or turning.

**Passing and Turning**
- Do not pass or run side-by-side with another bus on the highway.
- Keep a safe distance between vehicles if you must pass.
- When turning left, get into the left lane (if there is one) in plenty of time to make the turn safely.

**Following Other Vehicles**
Always leave at least a bus length between you and the vehicle in front of you. Outside of cities and towns, keep at least 200 feet between you and the vehicle in front of you.

**Railroad Crossings**
- As you approach a railroad crossing, tap your brakes lightly to warn other drivers that the bus is about to stop.
- Turn on your four-way hazard lights.
- Come to a full stop 15 to 50 feet from the nearest rail.
- Open the entrance door and driver's window.
- Turn off the warning lights unless you are loading and unloading passengers.
- Listen and look carefully in both directions.
- When it is safe to cross, close the entrance door and turn off the four-way hazard lights.
- Cross the railroad tracks in a gear which allows you to cross the rails completely without changing gears.

**Speed Limits for Buses**
• When traveling on interstate highways, you may drive 55 mph.
• You must travel 35 mph or less on all other highways.
• If you are driving on a highway where the posted speed limit is 45 mph or higher
  and you are not loading or unloading passengers between your place of
  departure and your destination, you may travel 45 mph.
• 25 mph in school, business and residential areas.

Remember, weather, road and traffic conditions may require you to travel slower
than these speed limits. When in doubt, slow down.

Handling Emergencies

Emergency Drills
Most State law requires that you hold an emergency exit drill at least once during the
first 90 calendar days of the school year or more often if needed. Your local school
board or board of education may require more frequent drills.

Emergency Situations

Bus accidents
• Do not move the bus until police or school officials arrive.
• Check the bus for injured students.
• Protect the crash scene by setting out flares or reflectors.
• Do not leave students unattended. Have a responsible student or passing
  motorist notify the authorities.
• Keep students on the bus unless there is extensive damage or danger of further
  injury or fire.

If another vehicle is involved, get the
✓ driver's name, address, phone number, driver's license number, insurance
  company name and policy number
✓ vehicle's license plate number and the state and the type of vehicle
✓ name, address and phone number of witnesses or other drivers involved in the
  crash

Break Downs
  1. Turn on the emergency four-way hazard lights.
  2. Set out flares or reflectors.
  3. Keep the students on the bus until other transportation arrives unless
     there is danger of injury

Transporting Passengers

Pre-Trip Inspection
Before driving your bus, make sure it is safe.

Review the inspection report made by the previous driver
Sign the previous driver's report only if the defects reported earlier have been certified as
repaired or certified as not needing repair. By signing this report, you certify that the
defects reported earlier have been fixed.

Conduct a pre-trip inspection
Follow the inspection method outlined in the General Knowledge portion of the CDL.
Also check:
**Access doors and panels:** Close any emergency exits that are open as well as access panels (for baggage, restroom service, engine, etc.) before driving.

**Bus Interior:**
- Aisles and stairwells should always be clear.
- Be sure that handholds and railings, floor covering, signaling devices (including the restroom emergency buzzer) and emergency exit handles are in good working order.
- Be sure that all seats are securely fastened to the bus.
- Never drive with an open emergency exit door or window.
- The emergency exit sign on an emergency door must work. If the door has a red emergency light, the light must work. Turn it on at night and whenever you use your outside lights.

**Roof Hatches**
You may lock some emergency roof hatches in a partly open position for fresh air. However, do not leave them open all the time. Remember that the bus will have a higher clearance when the hatches are open.

**Safety equipment**
Be sure your bus has a fire extinguisher and emergency reflectors as required by law. The bus must also have spare electrical fuses unless equipped with circuit breakers.

**Loading the Bus**
**Secure all baggage so that:**
- You can move freely and easily
- Riders sitting by any window or door can exit in an emergency
- Riders will not be injured if carry-ons fall or shift
- All aisles and doorways are clear

**Watch for cargo or baggage containing hazardous materials**
Hazardous materials pose a risk to health, safety and property. Most hazardous materials cannot be carried on a bus.
Federal regulations require shippers to mark containers of hazardous materials with the materials name, ID number and hazard label. There are nine different hazard labels. The labels are four-inches and diamond-shaped. Do not transport hazardous materials unless you are sure federal regulations allow it.

**Buses may carry:**
Small-arms ammunition labeled ORM-D
Emergency hospital supplies and drugs

**Buses may never carry:**
Class 2 poison, liquid Class 6 poison, tear gas or irritating material
More than 100 pounds of sold Class 6 poisons
Explosives in the space occupied by people, except small arms ammunition
Labeled radioactive materials in the space occupied by people
More than 500 pounds total of allowed hazardous materials and no more than 100 pounds of any one class
Riders may sometimes board a bus carrying an unlabeled hazardous material. Do not allow riders to carry on common hazards such as car batteries or gasoline.

**Do not allow riders to stand forward of the rear of the driver's seat**
Buses designed to allow standing must have a 2 inch line on the floor or some other marking that shows riders where they cannot stand. This is called the standee line. All standing riders must stay behind it.

**Safe Driving with Buses**
**Passenger Supervision**
Many charter and intercity carriers have passenger comfort and safety rules. Mention rules about smoking, drinking and use of radio and tape players at the start of the trip. Explaining the rules at the beginning could help avoid trouble later on. Charter bus drivers should not allow passengers on the bus until departure time.

While driving, scan the interior of your bus, as well as the road ahead. You may need to remind riders to keep their arms and heads inside the bus. Occasionally, you may have a drunk or disruptive rider. You must ensure this rider’s safety as well as the safety of others. Don't discharge disruptive riders where it would be unsafe for them. It may be safer to wait until you reach the next scheduled stop or well-lighted area where there are other people. Many carriers have guidelines for handling disruptive riders.

When you stop the bus, announce the location, reason for stopping, departure time and bus number. Caution riders to watch their step when leaving the bus. Wait for riders to sit down or brace themselves before starting the bus. Starting and stopping should be as smooth as possible to avoid rider injury.

**Avoiding Accidents**
Use caution at all intersections, even if a signal or stop sign controls the intersection. Bus crashes often happen at intersections.

Remember the clearance your bus needs. Watch for poles and tree limbs when you stop. Know the size of the gap your bus needs to accelerate and merge with traffic. Never assume other drivers will brake to give you room when you signal or begin to pull out.

Reduce speed on curves. Crashes on curves result from excessive speed. In good weather, the posted speed on a curve is safe for cars, but may be too high for buses. If your bus leans toward the outside on a banked curve, you are driving too fast.

Stop at railroad crossings.
- Stop your bus between 15 and 50 feet before railroad crossings.
- Listen and look in both directions for trains.
- Improve your ability to see or hear an approaching train by opening your forward door.
- If a train has just passed, make sure that another train isn't coming from the opposite direction.
• If your bus has a manual transmission, never change gears while crossing the tracks.

Slow down and check for other vehicles at:
• Street car crossings
• Railroad tracks used only for industrial switching within a business district
• Where a policeman or flagman is directing traffic
• If a traffic signal shows green
• At crossings marked "exempt" or abandoned."

Stop at drawbridges that do not have a signal light or traffic control attendant. Stop at least 50 feet before the draw of the bridge. Make sure the draw is completely closed before crossing. Slow down at drawbridges that show a green traffic light or that have an attendant that controls traffic when the bridge opens.

**After-Trip Vehicle Inspection**
Inspect your bus at the end of each shift. If you work for an interstate carrier, you must complete a written inspection report for each bus driven. The report must specify each bus and list any defect that would affect safety or result in a breakdown. The report must also state if there are no defects.

Report damage to hand-holds, seat, emergency exits and windows at the end of your shift. Mechanics can make repairs before the bus goes out again. Mass transit drivers should also make sure passenger signaling devices and brake-door interlocks work properly.

**Prohibited Practices**
• Avoid fueling your bus with riders on board unless absolute necessary. Never refuel the bus in a closed building with riders on board.
• Don't talk with riders or engage in distracting activity while driving.
• Do not tow or push a disabled bus with riders on board unless getting off would be unsafe. Tow or push the bus to the nearest safe spot to discharge passengers. Follow your employer's guidelines on towing or pushing disabled buses.
• Urban transit coaches may have a brake and accelerator interlock system. The interlock applies the brakes and holds the throttle in idle position when the rear door is open. The interlock releases when you close the rear door. Do not use this safety feature in place of the parking brake.
Introduction

This study guide contains eighty three commercial drivers license transporting passengers test questions and answers. These questions and answers were written by professional authors with extensive knowledge and experience in the transportation industry. This study guide was designed to help drivers pass the commercial drivers license passenger endorsement exam. The questions pertained in this study guide are not the actual questions that will appear on the commercial drivers license exam. It is unlawful to distribute the actual test questions found on the commercial drivers license exam.

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Transporting Passengers – Practice Test Questions

1) Name one thing to check in the interior of the bus during the pre-trip inspection.
   a) Seats
   b) Seat belts
   c) Emergency exits
   d) Passageways

2) What is a hazardous material that you can transport by bus?
   a) Propane
   b) Gas
   c) Carbon dioxide
   d) Emergency medical supplies

3) What is a hazardous material that you can NOT transport by bus?
   a) Propane
   b) Gas
   c) Carbon dioxide
   d) Emergency medical supplies

4) Where is the "standee" line?
   a) On the first step into the bus
   b) Directly behind the drivers seat
   c) At each emergency exit
   d) At the rear of the bus

5) Does it matter where you make a disruptive passenger get off of the bus?
   a) Yes
   b) No

6) How far from a railroad crossing should you stop?
   a) Between 25-50 feet
   b) Between 10-25 feet
   c) Between 15-50 feet
   d) Between 50-100 feet

7) Where must you stop before crossing a drawbridge?
   a) At least 50 feet before
   b) At least 100 feet before
   c) At least 75 feet before
   d) At least 15 feet before

8) The rear door of a transit bus needs to be opened to put on the parking brake.
   a) True
   b) False
   c) Some do, some do not
9) If the bus is a charter and is carrying farm workers, how many seats may be placed in the aisle?
   a) 4
   b) 6
   c) 8
   d) 0

10) Why should you be alert for a road hazard?
   a) So you can help impaired drivers
   b) So you will have time to plan your escape if it becomes an emergency
   c) So law officials can be called
   d) So the accident reports will be accurate

11) When making a lane change, when should you check your mirrors?
   a) After completing the change
   b) Right after starting the lane change
   c) Before and after signaling the change
   d) All of these

12) When you discharge an unruly passenger, you must choose a place that is:
   a) The most convenient
   b) As safe as possible
   c) Dark and poorly lighted
   d) Off your regular route

13) Which one of the following should never be carried on a bus with passengers?
   a) Emergency medical supplies
   b) Carbon dioxide
   c) Gas
   d) Tear gas

14) If your bus is equipped with an emergency exit door, it must:
   a) Not have any signs, markings or stickers near it
   b) Always have a red door light turned on
   c) Be secured when the bus is being driven
   d) All of these

15) A bus can carry freight or baggage in the passenger area, only if it is secured and:
   a) Riders are protected from falling packages
   b) All riders have access to all exits
   c) The driver can move freely
   d) All of these

16) How many folding aisle seats are permitted in bus that is not carrying farm workers?
   a) 8
   b) 6
   c) 4
   d) 0

17) You may sometimes haul small arms ammunition, medical and hospital supplies on a bus. The total weight of such hazardous material should not be greater than:
18) When carrying passengers, you must never fuel your bus:
   a) With any windows open
   b) Without a static chain
   c) In a closed building
   d) With a higher grade of fuel

19) Which of the following about speed management and braking is True?
   a) The posted speed limit will always allow you to stop safely
   b) The total stopping distance for a bus is the distance it takes to stop once the brakes are applied
   c) You need about 4 times as much stopping distance to stop at 40 mph as you do at 20 mph
   d) Stopping time increases one second for each 10 mph over 20 mph

20) When is the best time to wear your seatbelt?
   a) Always
   b) Only if the bus holds more than 27 people
   c) Only if required by the company policy
   d) Only when driving over 35 mph

21) When inspecting your bus, make sure that:
   a) Emergency exit handles are secure
   b) Rider signaling devices are working
   c) All handholds and railings are secure
   d) All of these

22) Your bus is disabled. The bus, with riders aboard may be towed or pushed to a safe place only:
   a) If getting off the bus would be more risky for riders
   b) If the distance is less than 500 yards
   c) By a 27,000 GVWR or larger tow truck
   d) By another bus, with 4 way flashers on

23) You must not allow riders to stand:
   a) Within 2 feet of a window
   b) Within 2 feet of an emergency exit
   c) In front of the standee line
   d) On top of the bus

24) Which of the following must you have on your bus?
   a) Spare electrical fuses, accident report, accident reporting kit
   b) Fire extinguisher, spare electrical fuses, reflectors
   c) Hydraulic jack, fire extinguisher, flares
   d) Reflectors, fire extinguisher, accident reporting kit

25) If a rider wants to bring a car battery or a can of kerosene aboard the bus, you should:
   a) Have them use a seat belt
   b) Sit them next to an open window
c) Send them to the rear of the bus
d) Not allow them to do so

26) Buses may have recapped or regrooved tires:
a) Anywhere except the front wheels
b) Only on the front wheels
c) Only when traveling less than 40 mph
d) On any or all of the wheels

27) Emergency windows may only be opened halfway while driving
a) True
b) False

28) You should not change gears while crossing railroad tracks.
a) True
b) False

29) When traveling at a safe speed, your bus should lean slightly to the outside on a banked curve.
a) True
b) False

30) Hazardous materials labels are diamond shaped.
a) True
b) False

31) All buses should be equipped with fire extinguishers and reflectors
a) True
b) False

32) Do not allow a passenger to stand forward of the rear of the drivers seat unless there is no room anywhere else.
a) True
b) False

33) If you are starting to get sleepy, it is a good idea to start a conversation with one of your passengers.
a) True
b) False

34) Disruptive passengers should be discharged immediately.
a) True
b) False

35) A brake door interlock is to be used in place of a parking brake.
a) True
b) False

36) Never refuel your bus with riders onboard in a closed building.
a) True
b) False
37) You should stop at least 50 feet before a drawbridge without an attendee or a signal control.  
a) True  
b) False  

38) Intersections are some of the most common places for bus crashes.  
a) True  
b) False  

39) The posted speed for curves is always the safest speed for a bus.  
a) True  
b) False  

40) You must stop a bus between 5 and 15 feet before a railroad crossing.  
a) True  
b) False  

41) When driving, you should scan the interior of the bus as well as the road ahead.  
a) True  
b) False  

42) A rider should be able to carry a car battery if it is secure and labeled.  
a) True  
b) False  

43) Riders are allowed to leave only one piece of luggage in the aisle.  
a) True  
b) False  

44) Buses can never carry Class A Poison.  
a) True  
b) False  

45) Front wheels on a bus must not have recapped or regrooved tires.  
a) True  
b) False  

46) What is the most dangerous type of backing?  
a. down a hill.  
b. to the right.  
c. any type of backing.  

47) When driving down a steep hill, extra caution must be taken. You should:  
a. shift to a lower gear and use the brakes.  
b. use your brakes only.  
c. down shift only.  

48) Shifting gears in a passenger transport vehicle is not permitted when:  
a. crossing a bridge.  
b. crossing a school crossing.
c. crossing a railroad tracks.

49) Buses may have recapped or regrooved tires:
   a. on all axles.
   b. front axle only.
   c. rear axles only.

50) Your bus is disabled and you have passengers on board. can you have the vehicle towed with the passengers on the bus.
   a. no.
   b. yes, anytime.
   c. yes only if it would be more risky to the passengers to stay by the road side.

51) The total weight of acceptable hazardous materials carried by a passenger transport vehicle must not be greater than ____ pounds.
   a. 1000
   b. 500
   c. 250

52) When braking, a bus will have the most traction when:
   a. the wheels are locked.
   b. when the wheels are rolling just short of locking.
   c. none of the above.

53) When you discharge an unruly passenger, you should choose a place that is:
   a. Off the regular route.
   b. as safe as possible.
   c. the next stop.

54) To stop for railroad tracks, a bus driver must stop the bus ____ feet before the nearest rail.
   a. 10 to 45
   b. 25 to 55
   c. 15 to 50

55) Which of the following shows the three types of emergency equipment that you must have on your bus?
   a. Reflectors, fire extinguisher, tire repair kit.
   b. spare electric fuses, fire extinguisher, emergency manual.
   c. Fire extinguisher, spare electric fuses, reflectors.

56) If there is no traffic signal or attendant, how far from the lip of a draw bridge should you stop?
   a. 250 feet.
   b. 50 feet.
   c. 100 feet.

57) As A bus driver are you allowed to haul any type of hazardous materials on a passenger transport Vehicle?
   a. yes
   b. no.
58) Before you place the bus in motion, you must make sure that:
a. all passengers are behind the standee-line.
b. all isle ways are unobstructed.
c. both a and b are correct.

59) Are you allowed to fuel the bus with passenger on the bus?
a. never.
b. yes, if absolutely necessary.
c. every time you fuel, you must keep the passengers on board, so they don't get lost.

60) Do you have to stop at a railroad crossing marked "exempt"?
a. only if you have passengers on board.
b. no.
c. yes.

61) When should you brake for a curve?
a. before you enter it.
b. just as you enter it.
c. you should never brake for a curve.

62) When doing your pre-trip on a bus, you look for the following:
a. loose items on the ground that are of little importance.
b. seats properly attached to the floor.
c. what type of clothes the passengers are wearing.

63) Where do most accidents happen that involve a bus?
a. at intersections.
b. railroad crossings.
c. on the open road because of driver fatigue.

64) Which direction does a bus lean when its in a curve?
a. to the inside of the curve.
b. to the front of the bus.
c. to the outside of the curve.

65) What three inspections is the driver of a bus responsible for?
a. pre-trip, during trip and post trip on the last vehicle driven.
b. pre-trip, during trip, and post-trip on each vehicle driven that day.
c. none, the mechanic does all inspections.

66) At night where would you discharge a disruptive passenger?
a. only at their stop.
b. in a well lighted place.
c. in a swamp.

67) What mirrors should you scan as you are driving a bus?
a. left outside, right outside.
b. only the convexed mirrors.
c. left, right and interior mirrors.
68) The speed limit for buses:
   a. is the same as automobile under all conditions.
   b. is only the same during daylight hours.
   c. in curves a bus should go slower that the posted speed limit.

69) What are some of the things you would check before starting the bus.
   a. oil level, tire pressure, exterior lights and fuel tanks.
   b. post-trip inspection from the last day the vehicle was used.
   c. both a and b are correct.

70) Are you allowed to fuel the bus with the engine running and passengers on board.
   a. no.
   b. yes.
   c. both a and b are correct.

71) At the end of your trip or shift you should re-inspect the interior of the bus
   a. Because it is required by the FCC.
   b. As a courtesy to the next driver.
   c. Because riders sometimes damage items that may result in a safety hazard.

72) To minimize the risk during loading and unloading of riders, you should -
   a. Start and stop the bus as smoothly as possible.
   b. Caution riders to watch their step when leaving the vehicle.
   c. Wait for riders to sit down or brace themselves before moving the bus.

73) At a bus stop in front of an army surplus store two people are waiting. One person is
   holding a 6" X 6" X 12" green can marked, cartridges small arms 5.56mm. The other
   person has a wooden box marked with a 4" diamond shaped "explosive" hazard label. You
   should -
   a. Not allow either person on the bus.
   b. Allow only the passenger with the green can to board.
   c. Allow only the passenger with the wooden box to board.
   d. Allow both persons to board with the items.

74) Two people are waiting at your stop. One person is carrying an automobile battery, and
   the other, two gallons of gasoline in a red fuel can. You should -
   a. Allow both passengers to board.
   b. Allow only the passenger with the battery to board.
   c. Allow only the passenger with the gasoline to board.
   d. Not allow either passenger to board with the items.

75) Most hazardous materials are allow on passenger vehicles, if they are proper packed
   and marked.
   a. True.
   b. False.

76) A brake-door interlock, applies the brakes and holds the throttle in idle position while
   the rear doors is open.
   a. True.
   b. False.
77) Bus drivers are required to have a commercial license if they drive a vehicle designed to seat -
   a. 12 or more persons, including the driver.
   b. 15 or more persons, including the driver.
   c. 18 or more persons, including the driver.
   d. 21 or more persons, including the driver.

78) Interstate carriers are required to complete a written inspection report.
   a. True.
   b. False.

79) Where do most bus accidents occur?
   a. Highway ramps.
   b. Intersections.
   c. Bus stops.
   d. None of the above.

80) Drivers should avoid -
   a. Pushing or towing a vehicle containing passengers.
   b. Fueling the bus with passengers.
   c. Conversing with the riders while driving.
   d. All of the above.

81) Standee lines are usually located just aft of the drivers seat.
   a. True.
   b. False.

82) How many different types of hazardous material labels are there?
   a. 6.
   b. 3.
   c. 9.
   d. 19.

83) What does ORM-D mean relating to hazardous materials?
   a. Other required materials - Dangerous.
   b. Other regulated materials - Dangerous.
   c. Other required materials – Domestic.
   d. Other regulated Materials – Domestic.
Transporting Passengers – Practice Test – Answers

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Introduction

This study guide contains forty five commercial drivers license school bus test questions and answers. These questions and answers were written by professional authors with extensive knowledge and experience in the transportation industry. This study guide was designed to help drivers pass the commercial drivers license school bus endorsement exam. The questions pertained in this study guide are not the actual questions that will appear on the commercial drivers license exam. It is unlawful to distribute the actual test questions found on the commercial drivers license exam.

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School Bus – Practice Test Questions

1. Before crossing any highway-rail crossing in a school bus, be sure the bus has enough containment to completely clear the railroad tracks. As a general rule how much space is considered an acceptable amount of containment for a school bus?
   a. The length of the bus plus 25 feet.
   b. The length of the bus plus 15 feet.
   c. The length of the bus plus 10 feet.

2. Why should a post-trip inspection performed?
   a. To check for sleeping students or articles left on the bus.
   b. To check for mechanical/damage or vandalism to the bus.
   c. Any of the above.

3. The properly adjusted outside left and right side convex mirrors allow visibility in what area?
   a. The entire side of the bus up to the front tires at ground level, in front of the rear tires touching the ground, and at least one traffic lane on either side of the bus.
   b. The area directly in front of the bus.
   c. Front of the rear tires touching the ground, the entire side of the bus up to the mirror mounts, and at least one traffic lane on either side of the bus.

4. What is the value of the overhead inside rearview mirror?
   a. It is used to monitor passenger activity inside the bus.
   b. It is used to monitor the driver’s appearance.
   c. It is used to provide visibility directly in back of the bus.

5. What is an example of a mandatory evacuation?
   a. There is no radio communication with base.
   b. There are community adults on the scene.
   c. The bus is stalled on or adjacent to a railroad highway crossing.

6. When should you activate your alternating flashing amber warning lamps?
   a. Activate alternating flashing amber warning lamps 100 to 300 feet before the school bus stop.
   b. Activate alternating flashing amber warning lamps 300 to 500 feet before the school bus stop.
   c. None of the above.

7. At a railroad crossing, the bus is required to stop at the stop line or, if there is no clearly marked stop line, what is the required minimum and maximum stopping distance?
   a. No closer than 15 feet and no farther than 30 feet, where you have the best view of the tracks.
   b. No closer than 10 feet and no farther than 40 feet, where you have the best view of the tracks.
   c. No closer than 15 feet and no farther than 50 feet from the nearest rail, where you have the best view of the tracks.

8. Why is proper adjustment and use of all mirrors so vital to the safe operation of the school bus?
   a. In order to observe the danger zone around the bus.
   b. In order to clear up blind spots around the bus.
   c. In order to observe the danger zone around the bus and look for students, traffic, and other objects in this area.
9. Where does the properly adjusted outside left and right side flat mirror enable visibility?
   a. Along the sides of the bus and the rear tires touching the ground.
   b. 200 feet or 2 bus lengths behind the bus.
   c. Along the sides of the bus, 200 feet or 4 bus lengths behind the bus, and the rear tires touching the ground.

10. Where are children in the most danger outside of the school bus?
    a. The area to the left of the bus because of passing vehicles.
    b. The front and rear areas of the bus.
    c. Anywhere outside the bus defined as the danger zone.

11. What do the outside left and right side cross view mirrors do?
    a. They are used to see the “danger zone” area directly in front of the bus.
    b. Presents a view of people and objects that does not accurately reflect their size and distance from the bus.
    c. All the above.

12. Who should make the final decision that it is safe to proceed across a passive crossing?
    a. The school bus driver.
    b. The dispatcher.
    c. None of the above.

13. All mirrors should be viewed in what manner?
    a. Simultaneously every 4 seconds.
    b. In a logical sequence checking traffic and passengers every 5 seconds.
    c. In a logical sequence to insure that a child or object is not in any of the danger zones.

14. Where are blind spots on the bus?
    a. In the rear of the bus and could extend up to 400 feet depending on the width of the bus.
    b. Immediately below and in front of each mirror and directly in back of the rear bumper.
    c. Both a & b above.

15. Why is understanding the loading or unloading procedure so critical?
    a. Because only high school students understand how to cross the road.
    b. Because more students are killed while getting on or off a school bus each year.
    c. Because motorists ignore students walking to school.

16. What should you do if you have lost ABS control at one or more wheels?
    a. Call dispatch to report the problem.
    b. Drive normally because you still have regular brakes but have system serviced soon.
    c. Drive faster so your ABS yellow malfunction lamp will go out.

17. How far should students exit the bus and walk to?
    a. The distance it takes to clear the danger zone.
    b. At least 10 feet away from the side of the bus.
    c. At least 8 feet away from the side of the bus.

18. What is a passive Railroad Crossing?
    a. A Railroad Crossing that is no longer in use.
    b. A Railroad Crossing that does not have any type of traffic control device.
c. A Railroad Crossing that has a traffic control device installed at the crossing to regulate traffic.

19. If the driver is evacuating the bus due to a stall or entrapment on railroad tracks what is the appropriate course of action?
   a. Get everyone out of the bus and off the tracks immediately.
   b. Move everyone from the bus at an angle away, which is both away from the tracks and toward the approaching train.
   c. All of the above.

20. How should you brake in a bus with ABS Brakes?
   a. Pump the brakes in an emergency situation.
   b. Apply the brakes, as usual.
   c. Apply the brakes and back off the brakes prior to the final brake, to stop.

21. Which of the following items are prohibited on a school bus?
   a) guns;
   b) large class projects;
   c) both a & b above.

22. How often should you check your mirrors?
   a) only before each trip;
   b) every 5-8 seconds;
   c) every 12-15 seconds;

23. How far ahead should you look while driving?
   a) 6 -8 seconds;
   b) 12 -15 seconds;
   c) 18 -20 seconds;

24. What school bus accidents must be reported?
   a) none
   b) only if there is injury
   c) all

25. Pupils must walk at least how many feet in front of a school bus to cross the road?
   a) 8 ft
   b) 10 ft
   c) 12 ft

26. A school bus driver doesn't have to wear a seat belt while loading or unloading students.
   a) True
   b) False

27. When approaching a school bus stop you should activate your overhead amber lights how far from the bus stop?
   a) 100 ft
   b) 200 ft
   c) 300 ft

28. Only some school bus drivers are required to participate in In-service training programs.
a) True
b) False

29. Inspection of buses are made one or more times a year in order to determine whether the school bus can be used to safely transport school children.
A) True
b) False

30. School bus drivers must have a commercial driver's license and:
   a) passenger and combination vehicle endorsements.
   b) school bus and passenger endorsements.
   c) air brake and tank endorsements.

31. What is the most important reason for doing a school bus inspection?
   a) To give the mechanic something to do.
   b) To assist the principal with their reports
   c) for safety/ required by Federal, State and local laws.

32. Each state board of education is charged with the primary responsibility of rules and regulations regarding pupil transportation.
   a) True
   b) False

33. What is the definition for reaction distance?
   a) the distance the driver travels before they realize there is a discipline problem.
   b) the distance they travel after applying the brakes.
   c) the distance traveled while moving their foot from the accelerator to the brake pedal.

34. Immediately after stopping you should:
   a) Tell the children to stand back until you are ready for them to load.
   b) Open entrance door slightly to activate the stop arms and overhead red warning lights.
   c) Get the children onto the bus as quickly as possible.

35. In addition to checking for spare electrical fuses, three red reflective triangles, and a properly charged and rated fire extinguisher, school bus drivers must also inspect the following emergency equipment:
   a) three red burning flares, safety belts in all seats.
   b) three flares of any type and alcohol.
   c) three red burning flares, a nine-item first-aid kit.

36. Make sure that emergency bus doors, roof hatches or push out windows used for emergency evacuation are not damaged and operate smoothly and close securely.
   a) True
   b) False

37. A battery/box check is important. The battery must be secure, connections must be tight and cell caps must be present. In addition these items should be checked:
   a) battery connections should show signs of excessive wear.
   b) battery connections should not show signs of excessive corrosion, but the battery box and cover or door is unimportant.
c) battery connections should not show signs of excessive corrosion and the battery box and cover or door should not be damaged and should be secure.

38. When checking a handicap lift the things that you should look for are:
   a) leaking, damaged or missing wheelchair.
   b) leaking, damaged, or missing parts and explain how lift should be checked for correct operation. Lift must be fully retracted and latched.
   c) leaking, damaged, or missing parts and explain how lift should be checked for correct operation. Lift must be 25 percent retracted and latched.

39. Check that the entry door is not damaged and:
   a) operates smoothly and closes securely from the outside.
   b) operates smoothly and closes securely from the inside.
   c) operates smoothly and closes securely from a remote location.

40. A school bus driver must also check the alternately flashing amber lights indicator, if equipped, the alternately flashing red lights indicator and the strobe light indicator, if equipped.
   a) True
   b) False

41. On a two-way street or highway, only vehicles moving in the same direction as the school bus must stop for a legally stopped school bus displaying red loading lights and stop signal arm.
   a) True
   b) False

42. When vehicles are traveling in the same direction as a legally stopped school bus displaying red loading lights and extended stop arm, they do not have to stop if the street or highway is a four-lane which is divided by an unpaved (grassy) median at least five-feet wide.
   a) True
   b) False

43. When vehicles are traveling in the same direction as a school bus displaying red loading lights and extended stop arm, they must stop if the street or highway is a four-lane which is divided by a raised median.
   a) True
   b) False

44. Vehicles must remain stopped until all red loading lights have been turned off.
   a) True
   b) False

45. When vehicles are traveling in the same direction as a school bus displaying its yellow warning lights that has not yet come to a complete stop, they must stop if the street or highway is a four-lane which is divided by an unpaved (grassy) median at least five-feet wide.
   a) True
   b) False
School Bus – Practice Test – Answers

1. B
2. C
3. C
4. A
5. C
6. A
7. C
8. C
9. C
10. C
11. C
12. A
13. C
14. C
15. B
16. B
17. B
18. B
19. C
20. B
21. C
22. C
23. B
24. C
25. B
26. B
27. C
28. B
29. A
30. B
31. C
32. A
33. C
34. C
35. C
36. A
37. C
38. B
39. B
40. A
41. B
42. B
43. A
44. A
45. B
Appendix A

Steering System
Appendix B

Suspension System