Nevada
R and J Endorsement
Study Guide

May 2010

Foreword

Nevada Class C Vehicle Endorsements

R May tow a combination of vehicles that have a gross vehicle weight rating of less than 10,000 pounds and do not exceed 70 feet in length. NAC 483.110.3(c)

J May tow a vehicle with a gross vehicle weight rating of more than 10,000 pounds. NAC 483.110.3(b)*

The R & J endorsements are for recreational use only.

This study guide is meant to assist you in preparing for the written and driving tests to obtain an R or J endorsement for your Class C license. For specific information on the Class C driving requirements, please see the Nevada Driver's Handbook.

Written tests can be taken at all offices.

Drive tests are administered at the following offices:

555 Wright Way, Carson City
3920 East Idaho Street, Elko
178 North Avenue F, Ely
973 West Williams Street, Fallon
4110 Donovan Way, North Las Vegas
810 East Greg Street, Sparks
1137 South Main Street, Tonopah
3505 Construction Way, Winnemucca

* If the gross combination weight rating is 26,001 pounds or more, the combination vehicle set-up would no longer be a J endorsement; it would then be a Class A Non-Commercial License. NAC 483.110.1(a)

Table of Contents

Section 1 - Loading and Securing a Trailer

Loading a Trailer

This section tells you about loading your trailer safely whether it is a travel trailer, fifth wheel, horse trailer, or other type of trailer. All drivers must understand some basic loading safety rules to get an R or J endorsement. If you load a trailer wrong, it can be a danger to others and to yourself. Other highway users can hit or be hit by items that come loose, or the inside of your trailer can be damaged during a quick stop or crash.

Weight and balance

It is important to know the weight and balance of your loaded trailer. Overloading can have bad effects on steering, braking and speed control. Overloaded vehicles have to go very slowly on upgrades. Worse, they may gain too much speed on downgrades. Stopping distance increases and brakes can fail when forced to work too hard.

Here are some definitions of weight you should know:

- *Gross vehicle weight (GVW)* – The total weight of a single vehicle plus its load.
- *Gross combination weight (GCW)* – The total weight of a powered unit plus trailer(s) plus the load.
- *Gross combination weight rating (GCWR)* – The weight specified by the manufacturer of a vehicle as the combined loaded weight of that vehicle and a trailing vehicle.
- *Axle weight* – The weight transmitted to the ground by one axle or one set of axles.
- *Tire load* – The maximum safe weight a tire can carry at a specified pressure. This rating is stated on the side of each tire.
- *Suspension systems* – Suspension systems have a manufacturer's weight capacity rating.
- *Coupling device capacity* – Coupling devices are rated for the maximum weight they can pull and/or carry.

Don't be top-heavy. The height of the vehicle's center of gravity is very important for safe handling. The higher the "center of gravity" (items piled up high or heavy items on top) means it is easier to turn over. It is very important to distribute the load or cargo so it is as low to the ground as possible. Put the heaviest items under the lightest parts or in the lower storage compartments. Rolling over is also more likely in curves, if you have to swerve to avoid a hazard, or turns. There are two things that a driver can do to prevent a rollover. They are: (1) Go slow around turns; and (2) Keep the cargo as close to the ground as possible.

Balance the weight. Improper weight balance can make vehicle handling unsafe. Too much weight on the steering axle can make steering difficult and cause damage to the steering axle and tires. Under-loaded front axles (caused by shifting the weight too far to the rear) can make the steering axle weight too light to steer safely. Also, too little weight on the driving axles can cause poor traction and the drive wheels may spin easily. During bad weather, the vehicle may not be able to maintain balance. If you have too much weight on one side of the trailer, it could cause it to rollover, especially on turns. On flatbed trailers, there is also a greater chance that the load will shift to the side or fall off.

Securing a Trailer

Ball and Hitch Coupler

The ball and hitch coupler is used on many types of trailers. This type of hitch is composed of a ball attached to the towing vehicle and a coupler at the end of the tongue or A-frame assembly at the front of the trailer. A load distributing hitch is used for heavier models such as utility trailers, boat trailers, and travel trailers. Load distributing hitches use special equipment to distribute the tongue load to all axles of both the tow vehicle and the trailer. This helps stabilize the tow vehicle.

It is important to ensure the ball attachment is locked into the mounting attachment of the towing vehicle with the pin and clip or other locking device, the ball is seated firmly in the coupler, and the coupler safety latch is secured in the down position. Also ensure the safety chains are attached, the electric lines are firmly seated and locked in place, but the chains and lines are not tangled, pinched, or dragging. All components of the ball and hitch coupling should be present and not missing or broken. The trailer tongue should also not be bent, cracked, or otherwise damaged.

Fifth Wheel Hitch

This type of hitch is mounted to the bed of a truck and is used with a fifth wheel trailer. The fifth wheel trailer has a kingpin at the end of the coupling unit on the front of the trailer. It is a very stable assembly, so not as much attention is given to balance and weight distribution. A disadvantage to this type of hitch is that it takes up most of the space in the bed of the truck, and the remaining space behind the hitch assembly must be kept clear for turning corners.

Before you back under the trailer, make sure the trailer brakes are locked. It is important to make sure the locking lever is locked after the jaws close around the kingpin. If the locking lever is not locked, the coupling is not right and should be fixed before driving the coupled unit. Also make sure the mounting assembly is not loose or missing any parts and the kingpin is not bent. The mounting assembly must be solidly attached. Ensure the electric lines are connected and not chafed, spliced, or worn and are not tangled, pinched, or dragging. The platform should not have any cracks or breaks in the structure that supports the fifth wheel skid plate, and there should be no space between the upper and lower fifth wheel coupling. The trailer should be lying flat on the fifth wheel skid plate. Make sure the fifth wheel plate is greased as

required to prevent steering problems. If equipped with a release arm, make sure it is in the engaged position and the safety latch is in place. To unlock the fifth wheel, pull the release handle to the open position.

Inspecting your trailer

As part of your pre-trip inspection, check for overloads, poorly balanced weight, and items that are not secured correctly. Also check that all outside storage compartment doors are latched securely or locked. The truck and trailer connection should be tested for security by pulling gently forward in low gear against the locked trailer brakes and then looking at the connection. The electric lines and chains from the car, truck, or RV to the trailer should be secured, but with enough slack for turns.

Inspect the trailer and the load securing devices again within 50 miles after beginning an extended trip. Make any adjustments needed and inspect again after you have driven for 3 hours or 150 miles. It would also be wise to inspect the trailer during every break you take throughout the drive.

Section 2 - Towing Safely

Be Aware of Your Surroundings

To be a safe driver, you need to know what's going on all around your vehicles. Not using your eyes properly is a major cause of accidents.

Looking Ahead - All drivers look ahead, but many don't look far enough ahead.

- *Importance of looking ahead* – Because stopping or changing lanes with a trailer can take a lot of distance, knowing what the traffic is doing on all sides is very important. You need to look well enough ahead to make sure you have room to make these moves safely.

- *How far ahead to look* – Most good drivers look 12 to 15 seconds ahead. That means looking ahead the distance you will travel in 12 to 15 seconds. At lower speeds, that's about one block. At highway speeds, it's about a quarter of a mile. If you're not looking that far ahead, you may have to stop too quickly or make lane changes. Looking 12 to 15 seconds ahead doesn't mean not paying attention to things that are closer to you. Good drivers shift their attention back and forth, near and far.

- *Look for traffic* – Look for vehicles coming onto the highway, into your lane, or turning. Watch for brake lights from slowing vehicles. By seeing these things far enough ahead, you can change your speed or change lanes if necessary to avoid a problem.

- *Look for road conditions* – Look for hills and curves, or anything that may require you to reduce your speed or change lanes. Pay attention to traffic signals and signs. If a light has been green for some time, anticipate the change, start slowing down, and be ready to stop. Traffic signs may alert you to road conditions where you may have to change speed.

Use Your Mirrors

It's important to know what is going on behind and to the sides of your vehicle. You need to use your mirrors to be aware of traffic and to check your vehicle. Check your mirrors more often in special situations.

- *Traffic* – Check the mirrors for vehicles on either side and in back of you. In an emergency, you may need to know if you can make a quick lane change. Use your mirrors to spot overtaking vehicles. There are "blind spots" that your mirrors cannot show you. Check your mirrors regularly to know where other vehicles are around you and to see if they move into your blind spots.

- *Your vehicle* – Use the mirrors to keep an eye on your tires. It's one way to spot a tire fire. If you're carrying open cargo, you can use the mirrors to check it. Look for loose straps, ropes, or chains. Watch for a flapping or ballooning tarp.

- *Lane changes* – You need to check your mirrors and perform head checks to make sure no vehicles are along side you and about to pass you. Check your mirrors:
  - Before you change lanes to make sure there's enough room;
  - After you have signaled check, that no one has moved from your blind spot;
  - Right after you start the lane change, double-check that your path is clear; and
  - After you complete the lane change.

- *Turns* – In turns, check your mirrors to make sure the rear of your vehicle will not hit anything.

- *Merges* – When merging, use your mirrors to make sure the gap in traffic is large enough for you to enter safely.

- *Tight maneuvers* – Any time you are driving in close quarters, check your mirrors often to make sure you have enough clearance.

- *Check quickly* – When you use your mirrors while driving on the road, check quickly. Look back and forth between the mirrors and the road ahead. Don't focus on the mirrors for too long, otherwise, you will travel quite a distance without knowing what's happening ahead.

- *Understand what you see* – Many large vehicles have curved mirrors that show a wider area than flat mirrors. They are also called "convex, fisheye, spot, or bug eye." They are often helpful, but everything appears smaller in a convex mirror than it would if you were looking at it directly. Things also seem farther away than they really are. It's important to realize this and to allow for it.

Signal Your Intentions

Other driver's can't know what you are going to do until you tell them. Signaling what you intend to do is important for safety, and it's the law. Here are some general rules for signaling.

Turns – There are three good rules for using turn signals:

1. Signal early. It's the best way to keep others from trying to pass you.
2. Signal continuously. You need both hands on the wheel to turn safely. Don't cancel the signal until you have completed the turn.
3. Cancel your signal. Don't forget to turn off your turn signal after you've turned if you don't have self-cancelling signals.

Lane changes – Put your signal on before changing lanes. Change lanes smoothly and safely maintaining your speed, allowing a driver you didn't see to honk the horn and/or avoid your vehicle.

Slowing Down – Warn drivers behind you when you see you'll need to slow down. A few light taps on the brake pedal – enough to flash the brake lights – should warn following drivers. Use the 4-way emergency flashers when you are driving very slow or are stopped. Warn other drivers in any of the following situations:

- *Trouble ahead* – the size of your vehicle may make it hard for drivers behind you to see hazards ahead. If you see a hazard that will require slowing down, warn the drivers behind by flashing your brake lights.

- *Tight turns* – most car drivers don't know how slow you have to go to make a tight turn in a large vehicle. Give drivers behind you warning by braking early and slowing gradually.

- *Driving slowly* – drivers often do not realize how fast they are catching up to a slow vehicle until they are very close. If you must drive slowly, alert following drivers by turning on your emergency flashers if it is legal. (Laws regarding the use of flashers differ from one state to another. Check the laws for each state where you will be driving.)

- *Don't direct traffic* – Some drivers try to help out others by signaling when it is safe to pass. YOU SHOULD NOT DO THIS. You could cause an accident. You could be blamed, and it could cost you many thousands of dollars.

Communicate Your Presence

Other drivers may not notice your vehicle even when it's in plain sight. Let them know you're there to help prevent accidents.

- *When passing* – whenever you are about to pass a vehicle, pedestrian, or bicyclist, assume they don't see you. They could suddenly move in front of you. When it is legal, tap the horn lightly or, at night, flash your lights from low to high beam and back. Drive carefully enough to avoid a crash even if they don't see or hear you.

- *When it's hard to see* – at dawn or dusk, or in rain, fog or snow, you need to make yourself visible to others. If you are having trouble seeing other vehicles, other drivers will have trouble seeing you. Turn on your lights. Use the headlights, not just the identification or clearance lights. Use the low beams, as high beams can bother people during the day or night.

- *When parked at the side of the road* – when you pull off the road and stop, always be sure to turn on the 4-way emergency flashers. This is especially important at night. Don't trust the taillights to give warning. Drivers have crashed into the rear of a parked vehicle because they thought it was moving normally.

If you must stop on the road or the shoulder of a road, you should put out your reflective triangles within ten minutes. Place your warning devices at the following locations:

- On the traffic side of the vehicle, within ten (10) feet of the front or rear corners to mark the location of the vehicle and approximately 100 feet behind and ahead of the vehicle on the shoulder or in the lane you are stopped in. (Fig. 1-1)

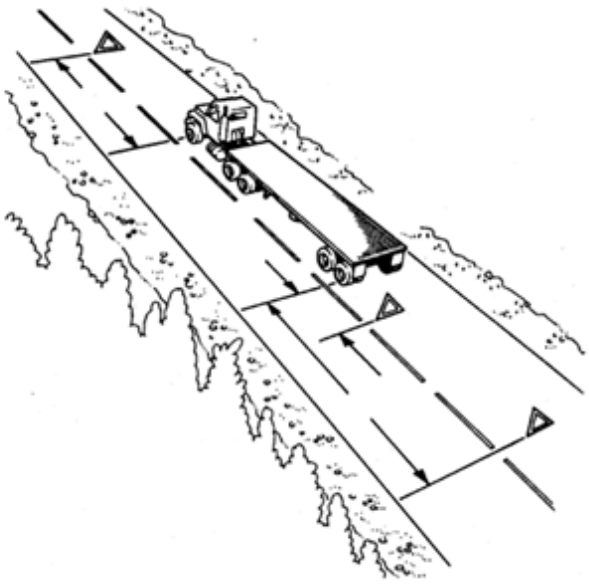
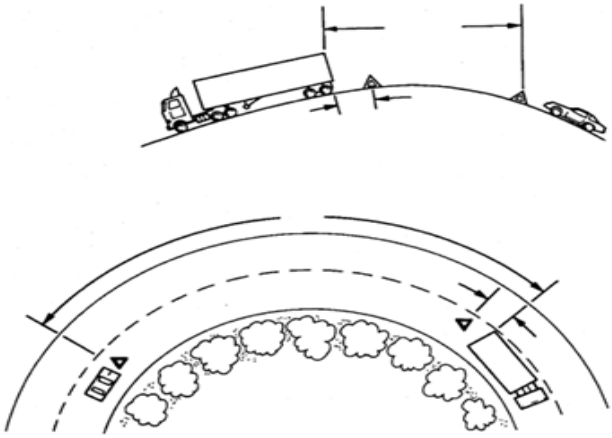


Figure 1-1
Warning Device Placement:
Two Lane (traffic in both directions) or
Undivided Highway



- Back down the road, beyond any hill, curve, or other obstruction that prevents other drivers from seeing the vehicle within 500 feet. (Fig 1-2)

Figure 1-2
Warning Device Placement:
Obstructed View

- If you must stop on or by a one–way divided highway, place warning devices 10 feet, 100 feet, and 200 feet toward the approaching traffic. (Fig. 1-3)

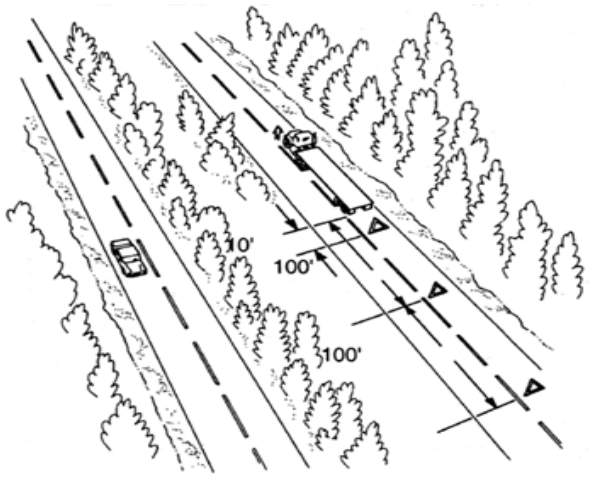


Figure 1-3
Warning Device Placement:
One Way or Divided Highway

- When putting out the triangles, hold them between yourself and the oncoming traffic for your own safety and so other drivers can see you.

Use your horn when needed

Your horn can let others know you are there and can help to avoid a crash. However, it can startle others and could be dangerous when used unnecessarily.

Controlling Speed

Stopping distance

Driving too fast is a major cause of fatal crashes. You must adjust your speed depending on driving conditions. These include traction, curves, visibility, traffic, and hills.

There are three things that add up to total stopping distance:

	Perception Distance
+	Reaction Distance
+	Braking Distance
=	Total Stopping Distance

Perception Distance – This is the distance your vehicle travels from the time your eyes see a hazard until your brain recognizes it. The perception time for an alert driver is about ¾ second. At 55 mph, you travel 60 feet in ¾ second.

Reaction Distance – The distance traveled from the time your brain tells your foot to move from the accelerator until your foot is actually pushing the brake pedal. The average driver has a reaction time of ¾ second. This accounts for an additional 60 feet traveled at 55 mph.

Braking Distance – The distance it takes to stop once the brakes are applied. At 55 mph on dry pavement, with good brakes, it can take a heavy vehicle about 170 feet to stop (about 4 ½ seconds).

Total Stopping Distance – At 55 mph, it will take about 6 seconds to stop, and your vehicle will travel about the distance of a football field (60 + 60 + 170 = 290 feet).

The effect of speed on stopping distance

Whenever you double your speed, such as from 20 mph to 40 mph, it takes about four times as much distance to stop and your vehicle will have four times the destructive power if it crashes. High speeds greatly increase stopping distances. Slowing down a little might help prevent an accident.

The effect of vehicle weight on stopping distance

The heavier the vehicle, the more work the brakes must do to stop it and the more heat they absorb. However, brakes, tires, springs, and shock absorbers on heavy vehicles are designed to work best when the vehicle is fully loaded. Actually empty trucks require **greater** stopping distances, because they have less traction. Also, an empty truck can bounce and lock up its wheels, giving poorer braking.

You can't steer or stop your vehicle without traction. Traction is friction between the tires and the road. There are some road conditions that reduce traction and call for lower speeds.

Speed and Curves

Drivers must adjust their speed for curves in the road. If you take a curve too fast, two things can happen. The wheels can lose their traction and continue straight ahead, so you skid off the road. Or, the wheels may keep their traction and the vehicle rolls over. Tests have shown that trucks with a high center of gravity can roll over at the posted speed limit for the curve.

To have the best control in a curve, slow to a safe speed before you enter the curve and be in a gear that will let you accelerate slightly through it. Braking in a curve is dangerous because it is easier to lock the wheels and cause a skid. Don't ever exceed the posted speed limit for the curve.

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 that you slow down to be able to stop in the distance you can see. At night, you can't see as far with low beams as you can with high beams. When you must dim your lights for traffic, you should slow down.

Speed and traffic flow

When you're driving in heavy traffic, the safety speed is the speed of other vehicles. Vehicles going the same direction at the same speed are not likely to run into one another. Drive at the speed of the traffic, if you can without going at an illegal or unsafe speed. Keep a safe following distance.

The main reason drivers exceed the speed limit is to save time. But anyone trying to drive faster than the speed of traffic will not be able to save much time. The risks involved are not worth it. If you go faster than the speed of other traffic, you have to keep passing other vehicles. This increases the chance of a crash. It is also more tiring and fatigue increases the chance of a crash. Going with the flow of traffic is safer and easier.

Speed on Downgrades

In mountain driving, gravity plays a major role. On any upgrade, gravity slows you down. The steeper the grade, the longer the grade, and/or the heavier the load, the more you will have to use lower gears to climb hills or mountains. In coming down long, steep downgrades, gravity causes the speed of your vehicle to increase. You must select an appropriate safe speed, then use a low gear and use proper braking techniques. If a speed limit is posted or there is a sign indicating “Maximum Safe Speed,” never exceed the speed shown. Look for and heed warning signs indicating the length and steepness of the grade.

You must use the braking effect of the engine as the principal way of controlling your speed. The braking effect of the engine is greatest when it is near the governed RPM’s and the transmission is in the lower gears. Save your brakes so you will be able to slow or stop as required by road and traffic conditions.

Shift the transmission to a low gear before starting down the grade. Do not try to downshift after your speed has already built up. You will not be able to shift into a lower gear. Forcing an automatic transmission into a lower gear at high speed could damage the transmission and lead to loss of all engine braking effect.

You must go slowly enough so your brakes can hold you back, if needed, without getting too hot. If the brakes become too hot, they may start to “fade.” This means you have to apply them harder and harder to get the same stopping power. If you continue to use the brakes hard, they can keep fading until you cannot slow down or stop at all.

It is always important for the brakes to be adjusted right. However, it is especially important when going down steep grades. If you have a brake modulator, the brake system should be balanced to give about the same braking at each set of wheels. Otherwise, some brakes will do more work than others. They will heat up and lose some of their stopping power.

Escape Ramps

Escape ramps have been built on many steep mountain grades. Escape ramps are made to stop runaway vehicles safely without injuring drivers and passengers and to help avoid damage to vehicles. Escape ramps use a long bed of loose soft material (pea gravel) to slow a runaway vehicle, sometimes in combination with an upgrade.

Know escape ramp locations on your route. Signs show drivers where ramps are located. Escape ramps save lives, equipment, and cargo. Use them if you lose your brakes.

Matching Your Speed to the Road Surface

Slippery Surfaces

It will take longer to stop and it will be harder to turn without skidding when the road is slippery.

You must drive slower to be able to stop in the same distance as on a dry road. Wet roads can double stopping distance. Reduce speed by about one third (e.g., slow from 55 mph to about 35 mph) on a wet road. On packed snow, reduce speed by a half or more. If the surface is icy, reduce speed to a crawl, and stop driving as soon as you can safely do so.

The following are some safety guidelines:

- *Start gently and slowly* – When first starting, get the feel of the road. Don't hurry.

- *Adjust turning and braking to conditions* – Make turns as gently as possible. Don't brake any harder than necessary.

- *Adjust speed to conditions* – Don't pass slower vehicles unless necessary. Go slow and watch far enough ahead to keep a steady speed. Avoid having to slow down and speed up. Take curves at slower speeds and don't brake while in curves. Be aware that as the temperature rises to the point where ice begins to melt, the road becomes even more slippery. Slow down more.

- *Adjust space to conditions* – Don't drive alongside other vehicles. Keep a longer following distance. When you see a traffic jam ahead, slow down or stop to wait for it to clear. Try hard to anticipate stops early and slow down gradually.

- *Wet brakes* – When driving in heavy rain or deep standing water, your brakes will get wet. Water in the brakes can cause the brakes to be weak, to apply uneven, or to grab. This can cause lack of braking power, wheel lockups, pulling to one side or the other, and jackknifes of a trailer.

- Avoid driving through deep puddles or flowing water if possible. If not, you should:
  - Slow down, do not drive through quickly.
  - Place transmission in a low gear.
  - Gently put on the brakes. This presses linings against brake drums or discs and keeps mud, silt, sand, and water from getting in.
  - Increase engine RPM and cross the water while keeping light pressure on the brakes.
  - When out of the water, maintain light pressure on the brakes for a short distance to heat them up and dry them out.
  - Make a test stop when safe to do so. Make sure no one is following, and then apply the brakes to be sure they work right. If not, dry out further as described above. (CAUTION: Do not apply too much brake pressure and accelerator at the same time or you can overheat brake drums and linings.)

Identifying Slippery Surfaces

Sometimes it's hard to know if the road is slippery.

Here are some signs of slippery roads.

- *Shady areas* – Shady parts of the road will remain icy and slippery long after open areas have melted.

- *Bridges* – When the temperature drops, bridges will freeze before the road will. Be especially careful when the temperature is close to 32 degrees Fahrenheit.

- *Melting Ice* – Slight melting will make ice wet. Wet ice is much more slippery than ice that is not wet.

- *Black Ice* – Black ice is a thin layer that is clear enough that you can see the road underneath it. It makes the road look wet. Any time the temperature is below freezing and the road looks wet, watch out for black ice.

- *Vehicle Icing* – An easy way to check for ice is to open the window and feel the front of the mirror, mirror support, or antenna. If there's ice on these, the road surface is probably starting to ice up.

- *Just after rain begins* – Right after it starts to rain, the water mixes with oil left on the road by vehicles. This makes the road very slippery. If the rain continues, it will wash the oil away.

- *Hydroplaning* – In some weather, water or slush collects on the road. When this happens, your vehicle can hydroplane. It's like water skiing; the tires lose their contact with the road and have little or no traction. You may not be able to steer or brake. You can regain control by releasing the accelerator. If you have a manual transmission, push in the clutch. This will slow your vehicle and let the wheels turn freely. If the vehicle is hydroplaning, do not use the brakes to slow down. It does not take a lot of water to cause hydroplaning. Hydroplaning can occur at speeds as low as 30 mph if there is a lot of water. Hydroplaning is more likely if tire pressure is low or the tread is worn. The grooves in a tire can carry water away; if they aren't deep, they won't work. Be especially careful when driving through puddles. The water is often deep enough to cause hydroplaning.

Managing Space

To be a safe driver; you need space all around your vehicle. When things go wrong, space gives you time to think and to take action. To have space available when something goes wrong, you need to manage your space. While this is true for all drivers, it is especially important for large vehicles. They take up more space and require more space for stopping and turning.

Space ahead

Of all of the space around your vehicle, it is the area ahead of the vehicle, the space you are driving into, that is most important. You need space ahead in case you must suddenly stop. Remember, if the vehicle ahead of you is smaller than yours, it can probably stop faster than you can. You may crash if you are following too closely. So, when pulling a trailer, allow more following distance than for smaller vehicles.

How much space?

How much space should you keep in front of you? One good rule says you need at least one second for each 10 feet of vehicle length at speeds below 40 mph. At greater speeds, you must add one second for safety. For example, if you are driving a 40-foot vehicle, you should leave 4 seconds between you and the vehicle ahead. In a 60-foot rig, you will need 6 seconds. Over 40 mph, you would need 5 seconds for a 40-foot vehicle and 7 seconds for a 60-foot vehicle.

To know how much space you have, wait until the vehicle ahead passes a shadow on the road, a pavement marking, or some other clear landmark. Then count off the seconds like this: “One thousand-and-one, one thousand-and-two” and so on, until you reach the same spot. Compare your count with the rule of one second for every 10 feet of length. If you are driving a 40-foot truck and only counted up to 2 seconds, you’re too close. Drop back a little and count again until you have 4 seconds of following distance (or 5 seconds, if you’re going over 40 mph). After a little practice, you will know how far back you should be. Remember to add one second for speeds above 40 mph. Also remember that when the road is slippery, you need much more space to stop.

Space behind

You can’t stop others from following you too closely, but there are things you can do to make it safer:

- Stay to the right; and
- Deal with tailgaters safely

Heavy vehicles are often tailgated when they can’t keep up with the speed of traffic. This often happens when you’re going uphill. If a heavy load is slowing you down, stay in the right lane if you can. Going uphill, you should not pass another slow vehicle unless you can get around quickly and safely.

In a large vehicle, it’s often hard to see whether a vehicle is close behind you. When you are traveling slowly, drivers trapped behind slow vehicles often follow closely. Many car drivers follow large vehicles closely during bad weather, especially when it is hard to see the road ahead.

If you find yourself being tailgated, here are some things you can do to reduce the chances of a crash:

- Avoid quick changes. If you have to slow down or turn, signal to reduce the chances of a crash.

- Increase your following distance. Opening up room in front of you will help you to avoid having to make sudden speed or direction changes. It also makes it easier for the tailgater to get around you.

- Don't speed up. It's safer to be tailgated at a low speed than a high speed.

- Don't turn on your taillights or flash your brake lights. Follow the suggestions above.

Backing with a Trailer

When backing a single vehicle, you turn the top of the steering wheel toward the direction you want to go. When backing with a trailer, you 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.

Because you cannot see everything behind your vehicle, backing up is always dangerous. Avoid backing whenever you can. When you park, try to park so you will be able to pull forward when you leave.

When you do have to back up with a trailer, try to position your vehicle so you can back in a straight line. Additionally, here are a few simple safety rules:

- *Look at your path* – Look at your line of travel before your begin. Get out and walk around the vehicle. Check your clearance to the sides and overhead in and near the path your vehicle will take.

- *Back slowly* – Always back as slowly as possible. That way you can easily correct any steering errors. You also can stop quickly if necessary.

- *Use the mirrors* – The mirrors will help you see whether the trailer is drifting to one side or the other.

- *Correct drift immediately* – As soon as you see the trailer getting off course, correct it by turning the top of the steering wheel in the direction of the drift.

- *Use driver-side backing* – Back and turn toward the driver's side whenever possible especially on a curved path. Back to the driver's side so you can see well. Backing toward the right side is very dangerous because you can't see as well. If you back and turn toward the driver's side, 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 added safety is worth it.

- *Pull forward* – When backing a trailer, make pull-ups to reposition your vehicle as needed.

- *Use a helper* – Use a helper when you can. There are blind spots. The helper should stand near the back of your vehicle where you can see them. Before you begin backing, work out a set of hand signals that you both understand. Agree on a signal for "STOP."

Spaces to the sides

Recreational vehicles are often wide and take up most of a lane. Safe drivers will manage what little space they have. You can do this by keeping your vehicle centered in your lane and avoid traveling next to others when possible.

Staying centered in a lane – You need to keep your vehicle centered in the lane to keep safe clearance on either side. If your vehicle is wide, you have little room to spare.

Traveling next to others – There are two dangers in traveling alongside other vehicles:

- Another driver may change lanes suddenly and turn into you; and
- You may be trapped when you need to change lanes.

Strong winds – Strong winds make it difficult to stay in your lane. The problem is usually worse for lighter vehicles. This problem can be especially bad coming out of tunnels. Don't drive alongside others if you can avoid it.

Find an open spot where you aren't near other traffic. When traffic is heavy, it may be hard to find an open spot. If you must travel near other vehicles, try to keep as much space as possible between you and them. Also, drop back or pull forward so that you are sure the other driver can see you.

The space around a recreational vehicle or truck and trailer is important in turns. Because of wide turning and off tracking, large vehicles can hit other vehicles or objects during turns.

Right turns

Here are some rules to help prevent right-turn crashes:

- Turn slowly to give yourself and others more time to avoid problems.

- If you are driving vehicles that cannot make the right turn without swinging into another lane, turn wide as you complete the turn. Keep the rear of your trailer close to the curb. This will stop other drivers from passing you on the right. See Figure 1-4 on the next page.

- Don’t turn wide to the left as you start the turn. A following driver may think you are turning left and try to pass you on the right. You may crash into the other vehicle as you complete your turn. See Figure 1-5 below.

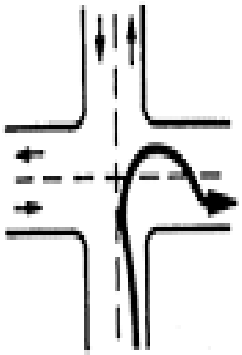


Figure 1-4
Do This

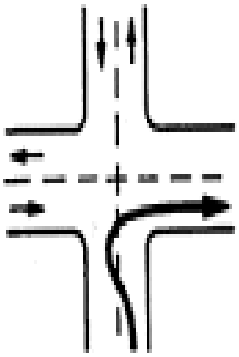


Figure 1-5
Don’t Do This

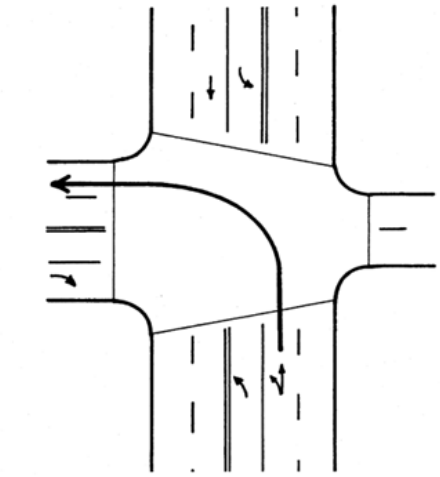
- If you must cross into oncoming traffic to make a turn, watch out for vehicles coming toward you. Give them room to go by or stop. However, don’t back up for them because you might hit someone behind you.

Left turns

On a left turn, make sure you have reached the center of the intersection before you start the left turn. If you turn too soon, the left side of your vehicle may hit another vehicle because of off-tracking.

If there are two turning lanes, always take the right hand turn lane. Don’t start in the inside lane because you may have to swing right to make the turn. Drivers on your right may be hard for you to see. You may crash into them.

Figure 1-6
If there are two left turn lanes, use the right-hand lane.



Space needed to cross or enter traffic

Be aware of the size and weight of your vehicle when you are crossing or entering traffic. Here are some important things to keep in mind:

- Because of slow acceleration and the space large vehicles require, you may need a much larger gap to enter traffic than you would in a car.
- Acceleration varies with the load. Allow more room if your vehicle is heavily loaded.
- Before you start across a road, make sure you can get all the way across before traffic reaches you.

Space overhead

Hitting overhead objects is a danger. Make sure you always have overhead clearance.

- Don't assume that the height posted at bridges and overpasses are correct. Repaving or packed snow may have reduced the clearances since the heights were posted.
- The weight of a vehicle changes its height. An empty trailer is higher than a loaded one. Going under a bridge when you were loaded does not mean that you can do it when you are empty.
- If you doubt you have enough space to pass under an object, go slowly. If you aren't sure you can make it, take another route. Warnings may or may not be posted on low bridges or underpasses.
- Some roads can cause a vehicle to tilt. There can be a problem clearing objects along the edge of the road, such as signs or trees. Where this is a problem, drive a little closer to the center of the road.
- Before you back into an area, get out and check for overhanging objects, such as trees, branches, or electric wires. It's easy to miss seeing them while you are backing. (Also check for other hazards at the same time)

Many drivers forget about the space under their vehicles. That space can be very small when a vehicle is heavily loaded. Railroad tracks can stick up several inches. This is often a problem on dirt roads and in unpaved yards where the surface around the tracks can wear away. Don't take a chance on getting hung up halfway across. Drainage channels across roads can cause the end of some vehicles to drag. Cross such depressions carefully.

Steering to Avoid a Crash

Stopping is not always the safest thing to do in an emergency. When you don't have enough room to stop, you may have to steer away from what's ahead. Remember, you can always turn to miss an obstacle more quickly than you can stop.

Keep Both Hands on the Steering Wheel

In order to turn quickly, you must have a firm grip on the steering wheel with both hands. The best way to have both hands on the wheel if there is an emergency is to keep them there all the time.

How to Turn Quickly and Safely

A quick turn can be made safely if it's done the right way. Here are some points that safe drivers use:

- Do not apply the brake while you are turning. It's very easy to lock your wheels while turning. If that happens, you may skid out of control.
- Do not turn any more than needed to clear whatever is in your way. The more sharply you turn, the greater the chances of a skid or rollover.
- Be prepared to "counter steer," that is, to turn the wheel back in the other direction, once you've passed whatever was in your path. Unless you are prepared to counter steer, you won't be able to do it quickly enough. You should think of emergency steering and counter steering as two parts of one driving action.

Where to Steer

If an oncoming driver has drifted into your lane, a move to your right is best. If that driver realizes what has happened, the natural response will be to return to his or her own lane. If something is blocking your path, the best direction to steer will depend on the situation.

If you have been using your mirrors, you'll know which lane is empty and can be safely used.

- If the shoulder is clear, going right may be best. No one is likely to be driving on the shoulder but someone may be passing you on the left. You will know if you have been using your mirrors.
- If you have traffic on both sides of your vehicle, a move to the right may be best. At least you won't force anyone into an opposing traffic lane and a possible head-on collision.

Leaving the Road

In some emergencies, you may have to drive off the road. It may be less risky than facing a collision with another vehicle.

Most shoulders are strong enough to support the weight of a large vehicle and, therefore, offer an available escape route. Here are some guidelines if you do leave the road:

- A*void Braking* – If possible, avoid using the brakes until your speed has dropped to about 20 mph. Then brake very gently to avoid skidding on a loose surface.
- *Keep one set of wheels on pavement if possible* – This helps to maintain control.
- *Stay on the Shoulder* – If the shoulder is clear, stay on it until your vehicle has come to a stop. Signal and check your mirrors before pulling back onto the road.
- *Returning to the Road* – If you are forced to return to the road before you can stop, use the following procedure:
    - Hold the wheel tightly and turn sharply enough to get right back on the road safely. Don't try to edge gradually back on the road. If you do, your tires might grab unexpectedly and you could lose control.
    - When both front tires are on the paved surface, counter steer immediately. The two turns should be made as a single "steer-counter steer" move.

How to Stop Quickly and Safely

Trailers have electric brakes that are normally activated by, and work in conjunction with, the car, truck, or RV braking action.

Normal stops

Push the brake pedal down. Control the pressure so the vehicles come to a smooth, safe stop. If you have a manual transmission, don't push the clutch in until the engine RPM is down close to idle. When stopped, select an appropriate starting gear.

Emergency stops

If somebody suddenly pulls out in front of you, your natural response is to hit the brakes. This is a good response if there's enough distance to stop and you use the brakes correctly.

You should brake in a way that will keep your vehicles in a straight line and allow you to turn if it becomes necessary. You can use the "controlled braking" method or the "stab braking" method.

Controlled braking

With this method, you apply the brakes as hard as you can without locking the wheels. It is also called “squeeze” braking.

- Keep steering wheel movements very small while doing this.
- If you need to make large steering adjustment or if the wheels lock and/or the vehicles begin to skid, release the brakes.
- Reapply the brakes as soon as the tires get traction.

Stab Braking

- Apply your brakes all the way.
- Release brakes when 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 brakes. If you reapply the brakes before the wheels start rolling, the vehicle won’t straighten out.)

Don’t Jam on the Brakes

Emergency braking does not mean pushing down on the brake pedal as hard as you can. That will only keep the wheels locked up and cause a skid. If the wheels are skidding, you cannot control the vehicle.

Parking

Any time you park, use the parking brake, except as noted below. Pull the parking brake control knob out to apply the parking brakes, push it in to release them. Always use chocks for a trailer that is unhitched from the car, truck, or RV.

Don’t use the parking brakes 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 they are used while they are very hot, the heat can damage them. If they are used in freezing temperatures when the brakes are very wet, they can freeze so the vehicle cannot move. Use wheel chocks to hold the vehicle. Let hot brakes cool before using the parking brakes. If the brakes are wet, use the brakes lightly while driving in a low gear to heat and dry them.

Skid Control and Recovery

A skid happens whenever the tires lose their grip on the road. The best way to stop all skids is to restore traction to the tires. Skids are caused in one of four ways:

Over braking – Braking too hard and locking up the wheels.

Over steering – Turning the wheels more sharply than the vehicle can turn.

Over acceleration – Supplying too much power to the drive wheels, causing them to spin.

Driving too fast – Most serious skids result from driving too fast for road conditions. Drivers who adjust their driving to conditions don't over accelerate and don't have to over brake or over steer from too much speed.

Tire Failure

Quickly knowing you have a tire failure will let you have more time to react. Having just a few seconds to remember what you're supposed to do can help you. The major signs of tire failure are:

Sound – The loud "bang" of a blowout is an easily recognized sign. Because it can take a few seconds for your vehicle to react, you might think it was some other vehicle. But any time you hear a tire blow, you'd be safest to assume it was yours.

Vibration – If the vehicle thumps or vibrates heavily, it may be a sign that one of the tires has gone flat. With a rear tire, that may be the only sign you get.

Feel – If the steering feels "heavy" it is probably a sign that one of the front tires has failed. Sometimes, failure of a rear tire will cause the vehicle to slide back and forth or "fishtail." However, dual rear tires usually prevent this.

Any of these signs is a warning of possible tire failure. You should do the following:

Hold the Steering Wheel Firmly – If a front tire fails, it can twist the steering wheel out of your hand. The only way to prevent this is to keep a firm grip on the steering wheel with both hands at all times.

Stay Off the Brake – It's natural to want to brake in an emergency. However, braking when a tire has failed could cause loss of control. Unless you're about to run into something, stay off the brake until the vehicle has slowed down. Then brake very gently; pull off the road and stop.

Check the Tires – After you've come to a stop, get out and check all the tires. Do this even if the vehicle seems to be handling all right. If one of your dual tires goes flat, the only way you may know is by getting out and looking at it.

Section 3 - Towing Multiple Vehicles

This section provides information needed to pass the tests for towing combinations of vehicles not exceeding 70 feet in length (e.g.: truck pulling two trailers). The information is only to give you the minimum knowledge needed for driving common combinations of vehicles and covers driving combinations, coupling and uncoupling, and inspection combinations.

Combination of Vehicles

Combinations of vehicles are usually heavier, longer, and require more driving skills than single vehicles or truck/trailer combinations. This means that drivers of combinations of vehicles need more knowledge and skill than drivers of single vehicles. In this section, we talk about some important safety factors that apply specifically to combinations of vehicles.

When towing a combination of vehicles, the heaviest vehicle must always be in the first position behind the towing vehicle. The lighter vehicle should be in the rear.

Vehicles with trailers have a dangerous “crack-the-whip” effect which increases with multiple trailers. When you make a quick lane change, the crack-the-whip effect can turn a trailer over. There are many accidents where only the trailer has overturned.

“Rearward amplification” causes the crack-the-whip effect. Figure 4-1 shows eight types of combination vehicles and the rearward amplification each has in a quick lane change. Rigs with the least crack-the-whip effect are shown at the top and those with the most are at the bottom. Rearward amplification of 2.0 in the chart means that the rear trailer is twice as likely to turn over as the truck. You can see that triples have a rearward amplification of 3.5. This means you can roll the last trailer of triples 3.5 times as easily.

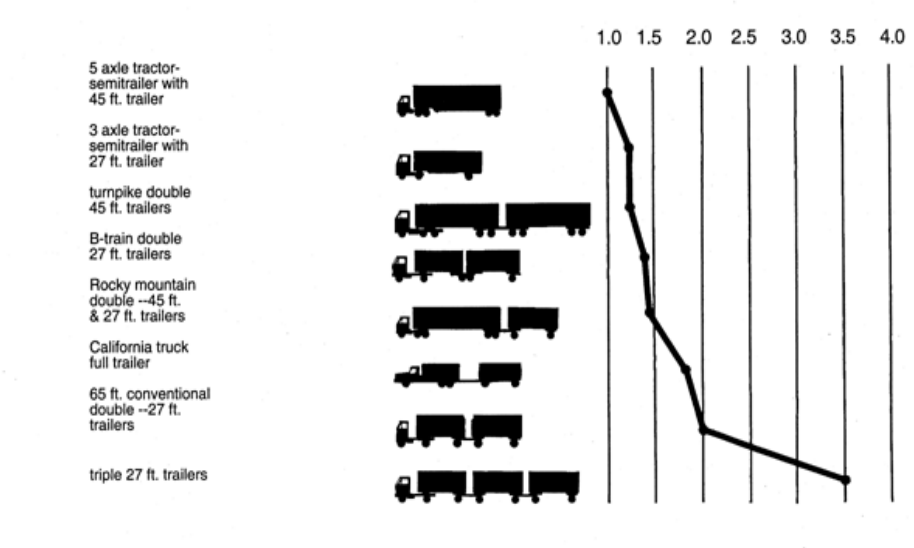


Figure 4-1 Influence of Combination Type on Rearward Amplification

(from R.D. Ervin, R.L. Nisonger, C.C. MacAdam, and P.S. Fancher, "Influence of size and weight variables on the stability and control properties of heavy trucks", University of Michigan Transportation Research Institute, 1983.)

Steer gently and smoothly when you are pulling trailers. Trailers flip over from quick steering moves more easily than many vehicles.

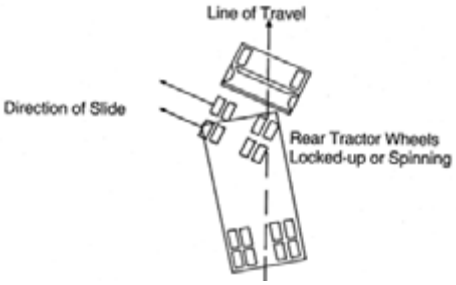


Figure 4-2 Truck Jackknife

Brake early

Control your speed whether fully loaded or empty. Large combination vehicles that are empty take longer to stop than when they are fully loaded. When lightly loaded, the very stiff suspension springs and strong brakes give poor traction and make it very easy to lock up the wheels. Your trailer can swing out and strike other vehicles. Your vehicle can jackknife very quickly. See Figure 4-2.

In any combination rig, allow a lot of following distance and look far enough ahead so you can brake early. Don't be caught by surprise and have to make a "panic" stop.

Prevent trailer skids

When the wheels of a trailer lock up, the trailer will tend to swing around. This is more likely to happen when the trailer is empty or lightly loaded. This type of jackknife is often called a "trailer jackknife." This is shown to the right.

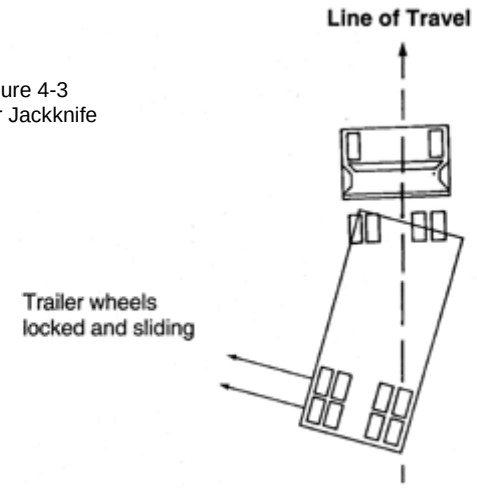


Figure 4-3
Trailer Jackknife

Recognizing the skid

The earliest and best way to recognize that the trailer has started to skid is by seeing it in your mirrors. Any time you apply the brakes hard; check the mirrors to make sure the trailer is staying where it should. Once the trailer swings out of your lane, it is very difficult to prevent a jackknife.

Stop using the brake

Release the brakes to get traction back. Do **not** use the trailer hand brake (if you have one) to straighten out the rig. This is the wrong thing to do, since it is the brakes on the trailer wheels that caused the skid in the first place. Once the trailer wheels grip the road again, the trailer will start to follow the vehicle and straighten out.

Section 4 - Pre-Trip Vehicle Inspection Test

This section covers internal and external inspections. During the pre-trip inspection, you must show that the vehicle is safe to drive. You will have to walk around the vehicle and point to or touch each item and explain to the examiner what you are checking and why. You may not have to crawl under the hood or under the vehicle**.**

All Vehicles

Study the following vehicle parts for the type of vehicle you will be using during the skills test. You should be able to identify each part and tell the examiner what you are looking for or inspecting.

Engine Compartment Only

- **Leaks/Hoses**
  - Look for puddles on the ground.
  - Look for dripping fluids on the underside of the engine and transmission.
  - Inspect hoses for condition and leaks.

- **Oil Level**
  - Indicate where the dipstick is located.
  - See that the oil level is within safe operating range. Level must be above refill mark.

- **Coolant Level**
  - Inspect reservoir sight glass; or
  - If engine is not hot, remove the radiator cap and check for visible coolant level.

- **Power Steering Fluid**
  - Indicate where power steering fluid dipstick is located.
  - Check for adequate power steering fluid level. Level must be above refill mark.

- **Engine Compartment Belts**
  - Check the following belts for snugness (up to ¾ inch play at center of belt), cracks, or frays:
    - Power steering belt
    - Alternator belt
    - Air compressor belt

Note - if any of the components listed above are not belt-driven, you must tell the examiner which component(s) are not belt-driven and ensure the component(s) are operating properly (not damaged or leaking) and are mounted securely.

Cab Check/Engine Start

- **Oil Pressure Gauge**
  - Make sure the oil pressure gauge is working.
  - Check that pressure gauge shows increasing or normal oil pressure or that the warning light goes off.
  - If equipped, the oil temperature gauge should begin a gradual rise to the normal operating range.

- **Ammeter/Voltmeter**
  - Check that gauges show the alternator and/or the generator is charging or that warning light is off.

- **Mirrors and Windshield**
  - Mirrors should be clean and adjusted properly from the inside.
  - Windshield should be clean with no illegal stickers, no obstructions, or damage to the glass.

- **Wipers/Washers**
  - Check that wiper arms and blades are secure, not damaged, and operates smoothly.
  - If equipped, windshield washers must operate correctly.

- **Horn**
  - Check that the air horn and/or electric horn are in working condition.

- **Heater/Defroster**
  - Test that the heater and defroster work

Light/Reflectors

Check that all external lights and reflective equipment are clean and functional. Light and reflector checks include the following:

- Clearance lights (red on rear, amber elsewhere)
- Headlights (low and high beams)
- Taillights
- Turn signals
- Four-way flashers
- Brake lights
- Red reflectors on rear, and amber reflectors elsewhere

Note: Checking of brakes, turn signal, and four-way flasher functions must be done separately.

Wheels

The following must be inspected on every vehicle:

- **Rims** – Check for damage or bent rims. Rims cannot have welding repairs.
- **Lug nuts** – Check that all lug nuts are present, free of cracks and distortions such as rust trails or shiny threads. Make sure bolt holes are not cracked or distorted. Ensure there are no signs of looseness.
- **Tread depth** – Check for minimum tread depth: 4/32” on steering axle tires, and 2/32” on all other tires.
- **Tire condition** – Check that tread is evenly worn and look for cuts or other damage to tread or sidewalls. Also make sure that valve caps and stems are not missing, broken, or damaged.
- **Tire inflation** – Check for proper inflation by using a tire gauge, or by striking tires with a mallet or other similar device.

Note: You will not get credit if you simply kick the tires to check for proper inflation.

Coupling

- **Electric Lines**
  - Check that electric lines are not chafed, spliced, or worn. The steel braid should not show through.
  - Make sure electric lines are not tangled, pinched, or dragging.
- **Mounting bolts**
  - Look for loose or missing mounting brackets, clamps, bolts, or nuts. Both the fifth wheel and the slide mounting must be solidly attached.
  - On other types of coupling systems (ball hitch, pintle hook, etc.) inspect all coupling components and mounting brackets for missing or broken parts.
    - Rings – these connect the trailer to the pintle hook. Inspect the ring for cracks, excessive wear or other damage.
    - Safety Latch – this holds the hook and ring from separating. Check to make sure the latch is in the down position and locked. Ensure it is not loose or damaged.
- **Locking jaws**
  - Look into fifth wheel gap and check that locking jaws are fully closed around the kingpin.
  - On other types of coupling systems (ball hitch, pintle hook, etc.) inspect the locking mechanism for missing or broken parts and make sure it is locked

securely. If present, safety cables or chains must be secure and free of kinks and excessive slack.

- **Platform (fifth wheel)** – Check for cracks or breaks in the platform structure that supports the fifth wheel skid plate.

- **Release Arm (fifth wheel)** – If equipped, make sure the release arm is in the engaged position and the safety latch is in place.

- **Kingpin/Apron/Gap/Trailer Tongue**
  - Check that the kingpin is not bent.
  - Make sure the visible part of the apron is not bent, cracked, or broken.
  - Check that the trailer is laying flat on the fifth wheel skid plate (no gap).

- **Locking Pins**
  - If equipped, look for loose or missing pins in the slide mechanism of the sliding fifth wheel. If air powered, check for leaks.
  - Make sure locking pins are fully engaged.
  - On other types of coupling systems, inspect the trailer tongue to ensure it is not bent, cracked, or otherwise damaged.

Trailer

- **Electrical Connections (trailer front)**
  - Make sure glad hands are locked in place, free of damage.
  - Make sure the trailer electrical plug is firmly seated and locked in place.

- **Tandem Release Arm/Locking Pins** – If equipped, make sure the locking pins are fully engaged and in the proper position. Ensure it is not worn, rusted, or damaged.

Section 5 - Basic Vehicle Control Skills Test

Your basic control skills will be tested using all of the following exercises, off-road or somewhere on the street during the road test:

1. Forward Stop
2. Straight line backing
3. Alley dock

These exercises are show in Figures 6-1 through 6-3.

Scoring

Cross boundaries

The examiner will score the number of times you touch or cross over an exercise boundary line with any portion of your vehicle. Each encroachment will count as an error.

Pull-ups

In some of the exercises, the examiner will also score the number of times you stop and change direction or pull-up during the exercise.

Exercises

Forward Stop - You will be asked to drive forward between two rows of cones and bring your vehicle to a complete stop as close as you can to the exercise boundary marked by an end line or set of cones (without going beyond the line of cones). See figure 6-1 to the right.

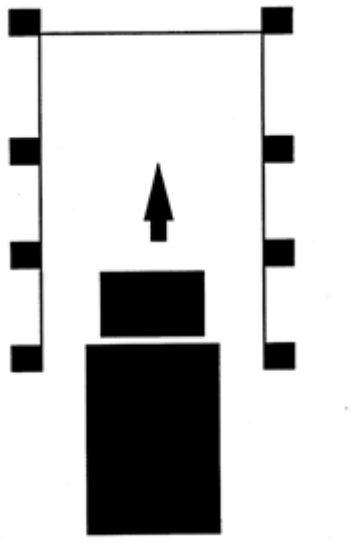
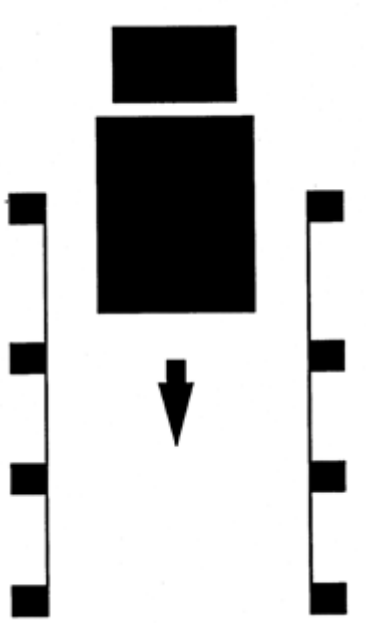


Figure 6-1
Forward Stop

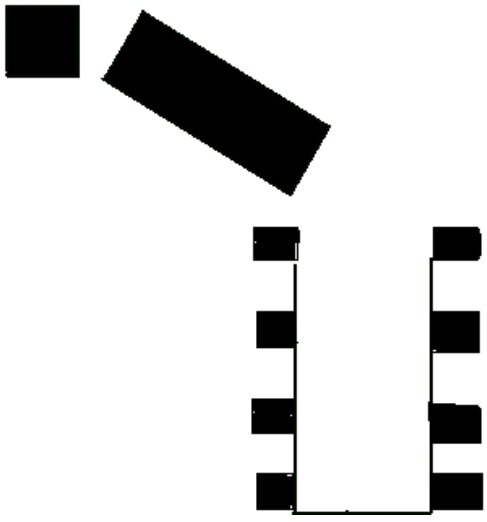


Straight line backing - You will be asked to back your vehicle in a straight line between two rows of cones without touching or crossing over the exercise boundaries.

Figure 6-2
Straight Line Backing

Alley dock - You will be asked to sight-side back your vehicle into an alley, bring the rear of your vehicle as close as possible to the rear of the alley without going beyond the exercise boundary marked by a line or row of cones.

Figure 6-3
Alley Dock



Section 6 - On-Road Driving Test

During the driving test, you must wear your safety belt, obey all traffic signs, signals, and laws, and complete the test without an accident or moving violation.

You will drive over a test route that has a variety of traffic situations. At all times during the test, you must drive in a safe and responsible manner.

The examiner will be scoring you on specific driving maneuvers as well as on your general driving behavior during the drive. You will follow the directions of the examiner. Directions will be given to you so you will have plenty of time to do what the examiner has asked. You will not be asked to drive in an unsafe manner.

You will be scored on your overall performance in the following general driving behavior categories:

Clutch Usage (manual transmission)

- Always use your clutch to shift.
- Double-clutch if the vehicle is equipped with non-synchronized transmission.
- Do not rev or lug the engine.
- Do not ride the clutch to control the speed, coast with the clutch depressed, or “pop” the clutch.

Gear Usage (manual transmission)

- Do not grind or clash gears.
- Select gear that does not rev or lug engine.
- Do not shift in turns and intersections.

Brake Usage

- Do not ride or pump brake.
- Do not brake harshly - brake smoothly using steady pressure.

Lane Usage

- Do not put vehicle over curbs, sidewalks, or lane markings.
- Stop behind stop lines, crosswalks, or stop signs.
- Complete a turn in the proper lane on a multiple lane road - vehicle should finish a left turn in the lane directly to the right of the center line.
- Finish a right turn in the right-most lane.
- Move to or remain in the right-most lane unless lane is blocked.

If your test route does not have certain traffic situations, you may be asked to simulate a traffic situation. You will do this by telling the examiner what you are or would be doing if you were in that traffic situation.

How You Will Be Tested

Turns

You have been asked to make a turn:

- Check traffic in all directions.
- Use your turn signals and safely get into the lane needed for the turn.

As you approach the turn:

- Use your turn signals to warn others of your turn.
- Slow down, smoothly change gears as needed to keep power, but do not coast unsafely. Unsafe coasting occurs when your vehicle is out of gear for more than the length of your vehicle.

If you must stop before making the turn:

- Come to a smooth stop without skidding.
- Come to a complete stop behind the stop line, crosswalk, or stop sign.
- If stopping behind another vehicle, stop where you can see the rear tires on the vehicle ahead of you (safe gap).
- Do not let your vehicle roll.
- Keep the front wheels aimed straight ahead.

When ready to turn:

- Check traffic in all directions.
- Keep both hands on the steering wheel during the turn.
- Do not change gears during the turn.
- Keep checking your mirror to make sure the vehicle does not hit anything on the inside of the turn.
- Vehicle should not move into oncoming traffic.
- Vehicle should finish turn in correct lane.

After turn:

- Make sure turn signal is off.
- Get up to speed on traffic, use turn signal, and move into right-most lane when safe to do so, if not already there.

Intersections

As you approach an intersection:

- Check traffic thoroughly in all directions (we're looking for head movement).
- Decelerate gently.
- Brake smoothly, and if necessary, change gears.

- If necessary, come to a complete stop (no coasting) behind any stop signs, signals, sidewalks, or stop lines, maintaining a safe gap behind any vehicle in front of you.
- Your vehicle must not roll forward or backward.

When driving through an intersection:
- Check traffic thoroughly in all directions.
- Decelerate and yield to any pedestrians and traffic in the intersection.
- Do not change lanes or shift gears while proceeding through the intersection.
- Keep your hands on the wheel.

Once through the intersection:
- Continue checking traffic.
- Accelerate smoothly and change gears as necessary.

Urban and Rural Straight

During this part of the test, you are expected to make regular traffic checks and maintain a safe following distance. Your vehicle should be centered in the proper lane (right-most lane), and you should keep up with the flow of traffic but not exceed the posted speed limit.

Urban and Rural Lane Changes

During the multiple lane portions of the urban and rural sections, you will be asked to change lanes to the left and then back to the right. You should make the necessary traffic checks first, then use proper signals and smoothly change lanes when it is safe to do so.

Stop and Start

For this maneuver, you will be asked to pull your vehicle over to the side of the road and stop as if you were going to get out and check something on your vehicle. You must check traffic thoroughly in all directions and move to the right-most lane or shoulder of the road.

As you prepare to stop:
- Check traffic.
- Activate your right turn signal.
- Decelerate smoothly, brake evenly, change gears as necessary.
- Bring your vehicle to a full stop without coasting.

Once stopped:
- Vehicle must be parallel to the curb or shoulder of the road and safely out of the traffic flow.
- Vehicle should not be blocking driveways, fire hydrants, intersections, signs, etc.
- Cancel your turn signal.
- Activate your four-way emergency flashers.
- Apply the parking brake.

- Move the gear shift to neutral or park.
- Remove your feet from the brake and clutch pedals.

When instructed to resume:
- Check traffic and your mirrors thoroughly in all directions.
- Turn off your four-way flashers.
- Activate the left-turn signal.
- When traffic permits, you should release the parking brake and pull straight ahead.
- Do not turn the wheel before your vehicle moves.
- Check traffic from all directions, especially to the left.
- Steer and accelerate smoothly into the proper lane when safe to do so.
- Once your vehicle is back into the flow of traffic, cancel your left-turn signal.

Curve

When approaching a curve:
- Check traffic thoroughly in all directions.
- Before entering the curve, reduce speed so further braking or shifting is not required in the curve.
- Keep vehicle in the lane.
- Continue checking traffic in all directions.

Upgrade

As you approach the upgrade:
- Select the proper gear to maintain speed and not lug the engine.
- Check the traffic thoroughly in all directions and move to the right-most or curb lane.
- If legal to do so, use four-way flashers if traveling too slowly for the flow of traffic.

Downgrade

Before starting down the grade:
- Downshift as needed to help control engine speed and test brakes by gently applying the foot brake to ensure they are functioning properly.
- As your vehicle moves down the grade, continue checking traffic in all directions, stay in the right-most or curb lane, and if legal to do so, use four-way flashers if your vehicle is moving too slowly for traffic.
- Increase following distance and observe the following downhill braking procedures:
    - Select a “safe” speed, one that is not too fast for the weight of the vehicle, length and steepness of the grade, weather, and road conditions.
    - Once a “safe” speed has been reached, apply the brake hard enough to feel a definite slowdown.
    - When speed has been reduced to five mph below the “safe” speed, release the brake.
    - Once speed has increased to the “safe” speed, repeat the procedure.

When operating any vehicle, do not ride the clutch, race the engine, change gears, or coast while driving down the grade. At the bottom of the grade, be sure to cancel your four-way flashers.

Not all test routes will contain an area of sufficient grade to test your skill adequately. Therefore, you may be asked to simulate (verbally) driving up and down a steep hill. You must be familiar with the upgrade/downgrade procedures so that you can explain and/or demonstrate them to the examiner at any time during the driving test.