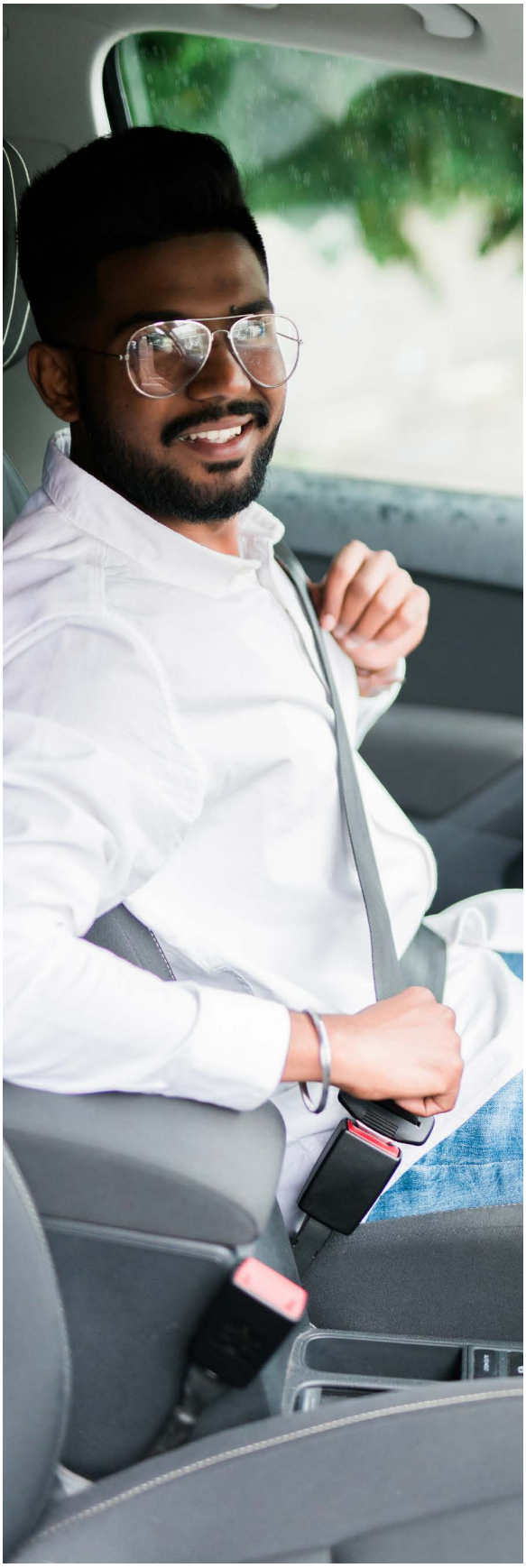


CHAPTER 4

BASIC DRIVING SKILLS

No manual can completely teach you how to become a safe driver. Studies show that the risk of a crash diminishes with experience – experience that can only be gained through instruction and practice.

4.1 STARTING THE VEHICLE

Check the vehicle owner's manual for the best starting procedures for the vehicle. The procedures vary depending on whether the vehicle has fuel injection, and the type of transmission.

4.2 SHIFTING GEARS

AUTOMATIC TRANSMISSION

When driving a vehicle equipped with an automatic transmission, there is no need to manually shift gears. Instead, the gear selector is only responsible for moving the car using the P-R-N-D-L column.

P – "Park" locks the vehicle for parking

R – "Reverse" for moving in reverse

N – "Neutral" to leave the engine idle

D – "Drive" to move the vehicle forward

L – "Low Gear*" to limit the engine's speed*

*Note: this may also be represented as "3, 2, 1" indicating the maximum gear the automatic transmission may shift to.

MANUAL TRANSMISSION

For vehicles with a manual transmission, shifting gears regulates the range of speeds the vehicle may travel in. Depending on the number of gears available, the driver must be able to shift from "Neutral" or "1" to higher gears, "2, 3, 4…" in order to accelerate. To do this, a third pedal called the "clutch" is used to alternate between gears.

Step 1: Depress the clutch with your left foot

Step 2: Shift the gear stick with your right hand

Step 3: Slowly step on the gas pedal while simultaneously releasing the clutch

Repeat this process when "downshifting" or when you need to slow down to come to a stop. This process is also used to move the vehicle backward by shifting into "Reverse" from the "Neutral" or "1" gear.

4.3 ACCELERATING

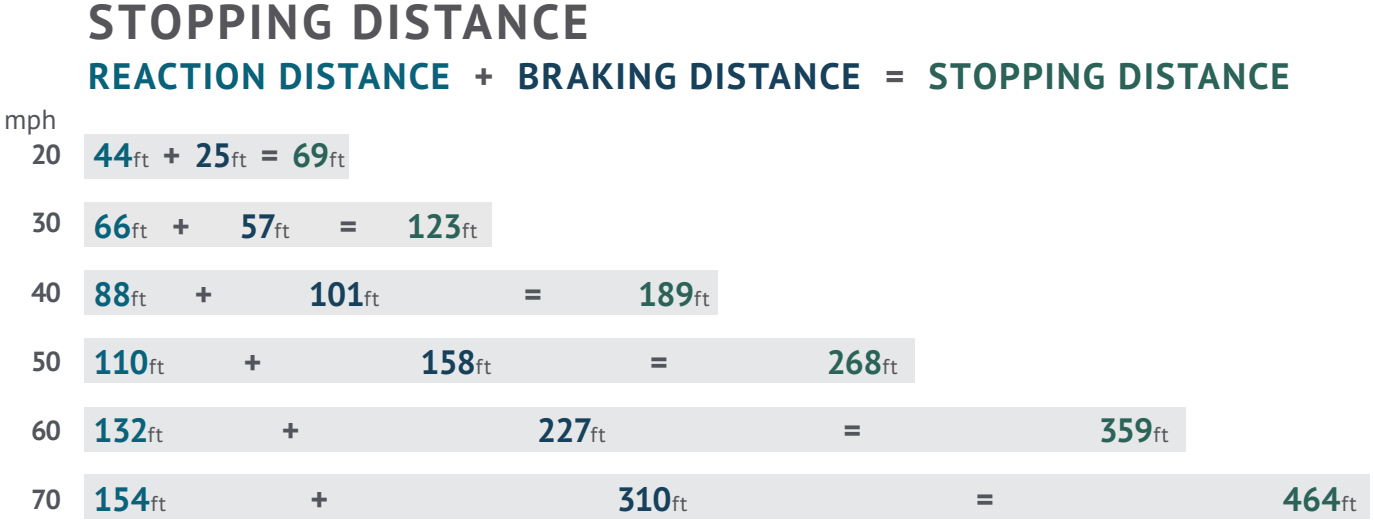
Accelerate gradually and smoothly. Trying to start too fast can cause the drive wheels to spin, particularly on slippery surfaces, causing the vehicle to slide. With a manual-shift vehicle, practice using the clutch and accelerator so the engine does not run too fast or stall when shifting between gears.

4.4 BRAKING AND STOPPING

Using your vehicle's brakes to come to a stop is one of the most important skills to learn. The time it takes your wheels to stop depends on the vehicle's weight, size, and load, as well as the condition of its tires. The reaction time in getting your foot on the brake pedal is also crucial. Learning how to smoothly and effectively come to a stop may take practice.

Even if your car and your reflexes are in top condition, different road surfaces still affect how fast you stop. Loose gravel roads, snow and ice, or even dry pavement may cause your vehicle to skid if the brakes are applied too hard. At higher speeds, it takes longer to stop. *(See figure 4.1)*

Figure 4. 1: Stopping distance

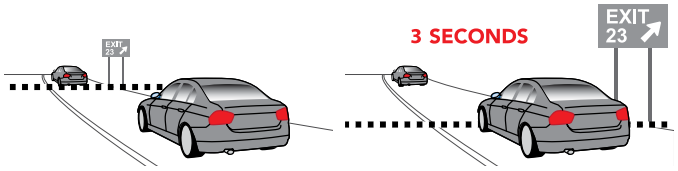


SAFE FOLLOWING DISTANCE

Since the greatest chance of a collision is in front of you, using the 3- to 4-second rule will help you establish and maintain a safe following distance and provide adequate time for you to brake to a stop if necessary. This rule only works in normal traffic under good weather conditions. *(See figure 4.2)*

- An inexperienced or beginning driver should maintain at least a three-second following distance under normal driving conditions.
- A two-second following distance may be sufficient in normal conditions for an experienced driver.
- At speeds of 40 mph, a four- to five-second following distance is recommended. When road conditions are slippery or the vehicle in front of you blocks your view, a following distance of six or more seconds is recommended.

Figure 4.2: 3- to 4- second rule



Watch the vehicle ahead of you pass a landmark, such as a sign, and begin slowly counting. In order to achieve a safe following distance, your front bumper should not pass the landmark before you've counted to three.

ABS (ANTILOCK BRAKING SYSTEM)

Most newer vehicles have ABS (antilock braking system). Be sure to read the vehicle owner's manual on how to use the ABS. The ABS will allow you to stop without skidding. If your vehicle has ABS and you need to stop quickly:

- Press on the brake pedal as hard as you can and keep pressing.
- You might feel the brake pedal pushing back when the ABS is working. Do not let up on the brake pedal. The ABS will only work with the brake pedal pushed down.

USING BRAKE LIGHTS TO COMMUNICATE WITH OTHER DRIVERS

If you are going to stop or slow down at a place where another driver does not expect it, or if the vehicle behind you is following too closely, tap your brake pedal three or four times quickly. This will let those behind you know you are about to slow down.

REQUIRED STOPS

You must always stop:

- At all stop signs.
- Before crossing a sidewalk when exiting a private roadway, driveway, alleyway, etc.
- When entering a public road from a private drive including, but not limited to, parking lots, businesses, schools, gas stations.
- At the request of any law officer.
- When instructed by a construction work zone flagger.
- At a flashing red light, then go ahead if it is clear.
- At all red traffic lights, including where right turns on red are allowed.
- When a visually impaired person with a cane (often white or red-tipped) or guide dog is walking in front of you or close enough to you that the person could be in danger.

See page 12 regarding stops at railroad crossings and page 20 for stops when approaching school buses displaying flashing lights and/or stop arms.

4.5 APPROPRIATE SPEED

The posted speed limit is the MAXIMUM speed you can legally drive **under ideal driving conditions.** Your speed should depend on the posted speed limit, road conditions, and weather. The faster your vehicle is going, the more distance it will take to turn, slow, or stop. For example, a vehicle traveling 60 mph will travel 3 times further than a vehicle traveling 30 mph before coming to a stop. *(See figure 4.1)*

In the event the speed limit is not posted, the following general limits have been set:

- 20 mph in any business district
- 25 mph in a residential district or school district
- 45 mph in any suburban district
- 45 mph for any vehicle pulling another vehicle
- 50 mph on unsurfaced secondary roads from sunset until sunrise, and for all trucks on secondary roads at any time of day
- 60 mph on all primary roads, urban interstate highways, and secondary roads, including unpaved roads from sunrise to sunset
- 70 mph on rural interstate highways

A lower limit may be set for any conditions listed above.

While driving too fast is a major cause of crashes, driving too slow may also cause a crash. Try to drive with the general traffic flow on any road. On the interstate system there is a minimum speed of 40 mph. Vehicles that cannot go at least that fast under normal conditions are not allowed on the interstate.

4.6 STEERING

GRIPPING THE WHEEL

To reduce the risk of injury from front airbags and best maintain control of your vehicle, use a proper grip. Your hands should be placed on opposite sides of the steering wheel at 9 and 3 o'clock or slightly lower at 7 and 5 o'clock. *(See Figure 4.3)*

- Look well down the road, not just immediately in front of you. Look for traffic situations where you will need to steer before you get to them. This way, you have time to steer smoothly and safely.
- When turning corners, turn the steering wheel using the "hand-over-hand" or the "push-pull" technique.
- Do not turn the wheel with just the palm of one hand; you could lose control. When you complete a turn, straighten out the steering wheel by hand. Letting it slip through your fingers could be dangerous.

Figure 4.3: Steering wheel hand position



4.7 BACKING

It's harder to maintain control when driving in reverse. Backing up should be done at slow speeds. Use the accelerator carefully, if at all.

- Backing up requires you to turn your head to see beyond the head restraint. Do not depend on mirrors or backup cameras alone as they don't provide a full view and can be misleading in depth perception.
- Shift your hips and turn around to get a good view behind the vehicle. Drape your right arm over the back of the seat, grasp the top of the steering wheel with your left hand, and look over your right shoulder through the rear window.
- Check all areas behind the vehicle and in the vehicle's blind spots prior to and while backing up.
- Release the brake, then use the accelerator gently, and only when necessary, to control speed. Keep it slow.
- Turn your wheel in the direction you want the car to travel.
- Look in the direction the car is moving through the rear side windows.

4.8 PROPER TURNING TECHNIQUES

Plan your turns ahead of time. Decide where you want to be when you finish the turn. Give yourself a chance to slow down and watch out for pedestrians and other vehicles. Last minute sharp turns are dangerous and should be avoided.

Do not cut corners, and do not swing wide on your turns. These actions increase your chances of being in a crash.

TURN SIGNALS

Turn signals communicate your intentions to others and give them time to react. You should use your turn signals before you change lanes, turn right or left, merge into traffic, or park.

- Signal every time you change direction. Signal even when you do not see anyone else around. There may be vehicles, pedestrians, or cyclists in your blind spot. It is easy to miss someone who needs to know what you are doing.
- Iowa law requires you to signal at least 100 feet before a turn if the speed limit is 45 mph or less and if the speed limit is faster than 45 mph, you must signal at least 300 feet before you turn.
- As a rule of thumb, signal prior to slowing down.
- Be careful that you do not signal too early. If there are streets, driveways, or entrances between you and where you want to turn, wait until you have passed them to signal.
- If another vehicle is about to enter the street between you and where you plan to turn, wait until you have passed it to signal your turn. If you signal earlier, the other driver may think you plan to turn where that driver is and he/she might pull into your path.
- Ensure the turn signal is off after the turn.

TURNS ON RED, AFTER A STOP

At a traffic signal, you may make a right turn at a red light unless there is a "NO TURN ON RED" sign. Prior to safely turning, you must come to a complete stop and yield to all other traffic.

You may also make a left turn at a red light if you are turning from the left lane of a one-way street onto another one-way street.

TURNING MANEUVERS

U-Turns

U-Turns should only be performed where their use is not prohibited and where it is safe to do so.

Three-point turns

Three-point turns are generally not a safe maneuver and can increase your risk and exposure to collisions. It is better to proceed to the nearest intersection.

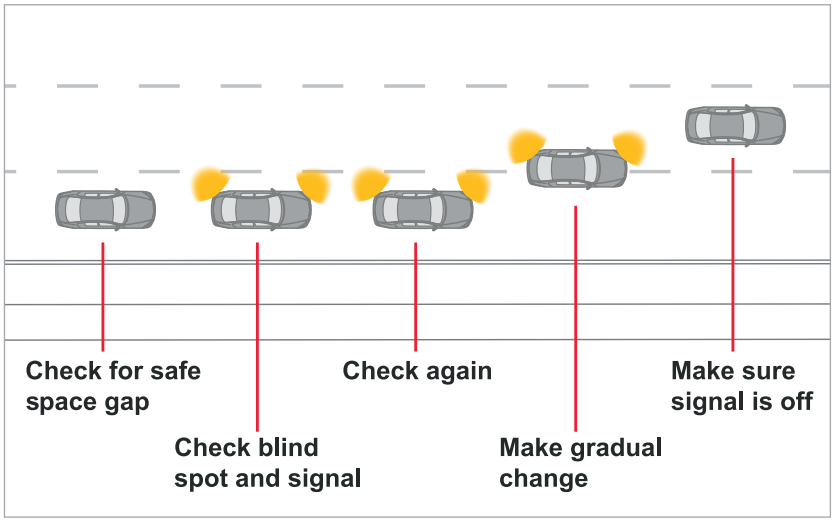
4.9 CHANGING LANES

Lane changes include:

- Changing from one lane to another.
- Merging onto a roadway from an entrance ramp.
- Entering the roadway from the curb or shoulder.

Only change lanes one lane at a time. Before changing lanes, check traffic around you and confirm there is space to safely enter the lane and yield to any vehicles already in that lane *(see figure 4.4)*

Figure 4. 4: Changing lanes



Signal: Inform other drivers of your plans by proper signaling.

Maintain speed: When you do make your lane change, do it carefully but without slowing down unless you are moving into a slower lane of traffic. While you are changing lanes, constantly check traffic so you will see anyone coming up on you unexpectedly.

Check your mirrors: Look in your rearview and side mirrors. Make sure there are no vehicles in the lane you want to enter. Make sure that nobody is about to pass you.

Check your blind spots: Look over your shoulder in the direction you plan to move. Be sure no one is near the rear corners of your vehicle.

When you turn your head to check the blind spots, make sure you keep the steering wheel straight; people have a natural tendency to turn their arms in the same direction as their head.

Check for other road users: Be sure to check the far lane, if there is one, as someone in that lane may be planning to move into the same lane you want to enter.

4.10 PASSING

Only pass another vehicle when signs (page 8) or road markings permit you to pass (figure 4.5), AND you've determined you have enough room to pass safely. Only pass when it is necessary.

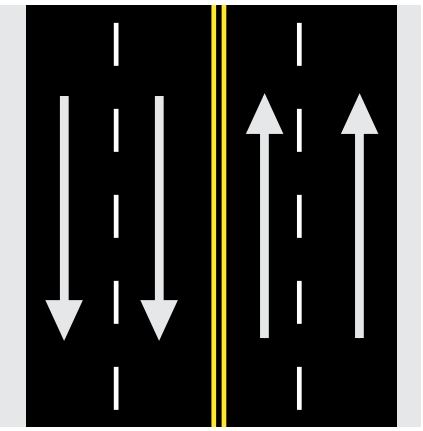
- As a rule, only pass one vehicle at a time.
- Avoid passing in places where a vehicle may enter the roadway ahead of you such as intersections and driveways.

If passing is necessary, take the following steps:

1. Check the passing lane ahead to make sure there's plenty of space before you try to pass.
2. Check mirrors and blind spots for traffic.
3. Signal intent to pass and accelerate as needed.
4. While passing, monitor the space in front of, and behind your vehicle, and check the rearview mirror.
5. When you see the front of the passed car in the rearview mirror and your vehicle is well clear, signal intent, gently and slowly move back to the original lane, cancel the signal, and return to a safe speed.

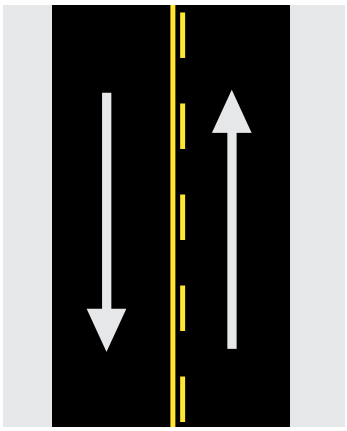
PAVEMENT MARKINGS INDICATE PASSING RULES

Figure 4.5: Pavement markings that indicate passing rules



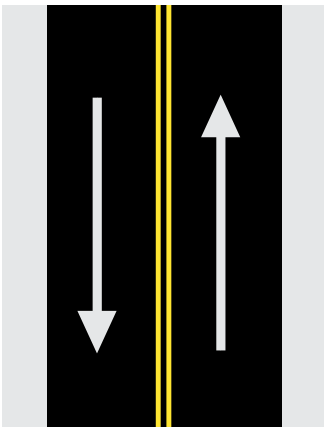
DOUBLE YELLOW CENTER LINE WITH BROKEN WHITE LANE LINES

No passing either way over center yellow lines. Broken white lines separate traffic traveling in the same direction. Passing is allowed when a broken white line is in your lane.



SOLID AND BROKEN YELLOW LINES

Do not pass when solid line is in your lane. In this example, the left lane cannot pass. Traffic in the right lane can pass.



DOUBLE YELLOW CENTER LINE

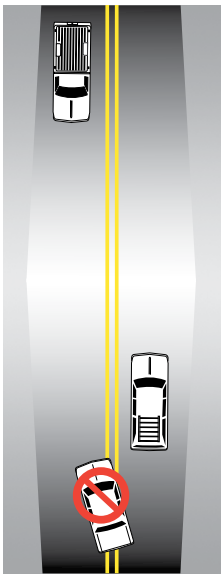
No passing in either lane.

Yellow lines separate traffic traveling in different directions

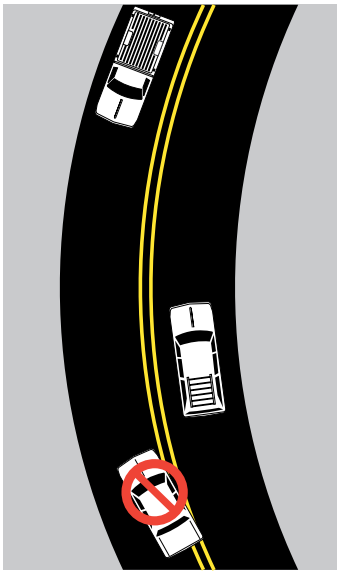
White lines separate traffic traveling in the same directions

PASSING IS ILLEGAL IN THE FOLLOWING SITUATIONS:

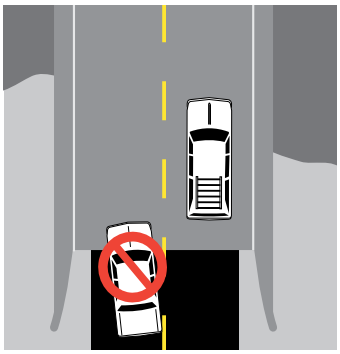
Figure 4.6: Illegal passing situations



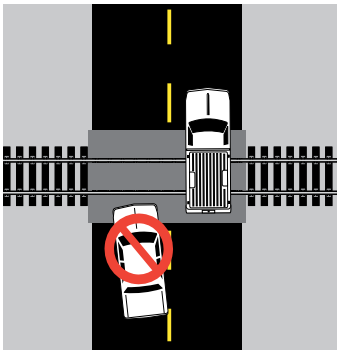
Do not pass when approaching the top of a hill.



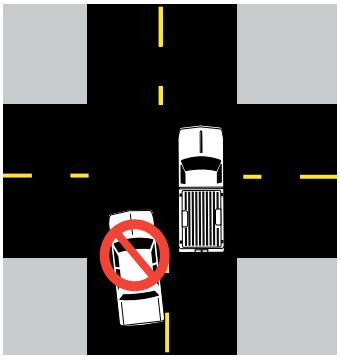
Do not pass going around a curve when your view along the roadway is obstructed.



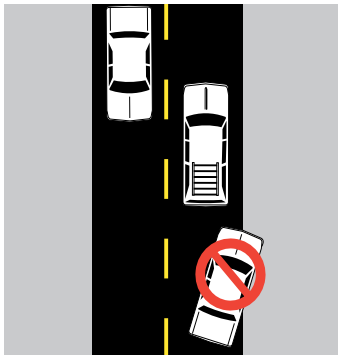
Do not pass within 100 feet of a narrow bridge, viaduct, or tunnel that has a sign posted to let you know it is there.



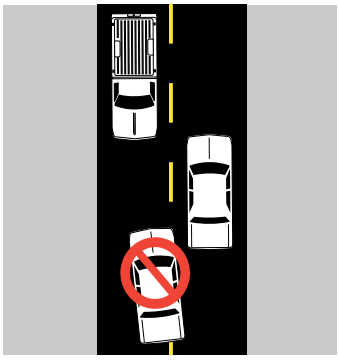
Do not pass within 100 feet of a railroad crossing.



Do not pass within 100 feet of an intersection.



Do not pass on the right.



Do not pass when oncoming traffic is so close it would be dangerous to try to make it around the vehicle you are passing.

4.11 DEFENSIVE DRIVING

When you drive safely and use defensive driving techniques, you're aware and ready for whatever happens. **94 percent of serious crashes are due to dangerous choices or errors people make behind the wheel.** Follow these defensive driving techniques to help reduce your risk of being involved in a crash:

1. Think safety first.

Avoiding aggressive and inattentive driving tendencies yourself will put you in a stronger position to deal with other people's driving choices. Leave plenty of space between you and the car in front. Always wear your seatbelt to protect you from being thrown from the car in a crash.

2. Be aware of your surroundings — pay attention.

Check your mirrors frequently and scan conditions 20 to 30 seconds ahead of you. Keep your eyes moving. If another driver is showing signs of aggressive driving, slow down or pull over to avoid them. If the driver is driving so dangerously that you're worried, try to get off the roadway by turning right or taking the next exit if it's safe to do so. Also, keep an eye on pedestrians, bicyclists, and animals along the road.

3. Do not depend on other drivers.

Be considerate of others but look out for yourself. Do not assume another driver is going to move out of the way or allow you to merge. Assume that drivers will run through red lights or stop signs and be prepared to react. Plan your movements anticipating the worst-case scenario.

4. Follow the 3- to 4-second rule. *(See figure 4.2 on page 41)*

Maintain a safe following distance to allow for time to react if necessary.

5. Keep your speed down.

Posted speed limits apply to ideal conditions. It's your responsibility to ensure that your speed matches conditions. In addition, higher speeds make controlling your vehicle that much more difficult if things go wrong.

6. Have an escape route.

In all driving situations, the best way to avoid potential dangers is to position your vehicle where you have the best chance of seeing and being seen. Having an alternate path of travel also is essential, so always leave yourself an out — a place to move your vehicle if your immediate path of travel is suddenly blocked.

7. Eliminate distractions.

A distraction is any activity that diverts your attention from the task of driving.

Driving deserves your full attention — so stay focused on the driving task.

4.12 DRIVING SAFELY IN TRAFFIC

KEEP PACE WITH TRAFFIC

Vehicles moving faster or slower than the flow of traffic result in an increased number of lane changes, passing, and instances of following too closely. This increases the chance of potential collisions between vehicles. The safest roadways are when all vehicles travel the same speed but do not exceed the speed limit.

SLOW-MOVING TRAFFIC

Always be ready to change your speed to match the speed of traffic. Some vehicles cannot travel very fast or have trouble keeping up with the flow of traffic. If you spot these vehicles early, you have time to change lanes or slow down safely. Slowing suddenly can cause a crash.

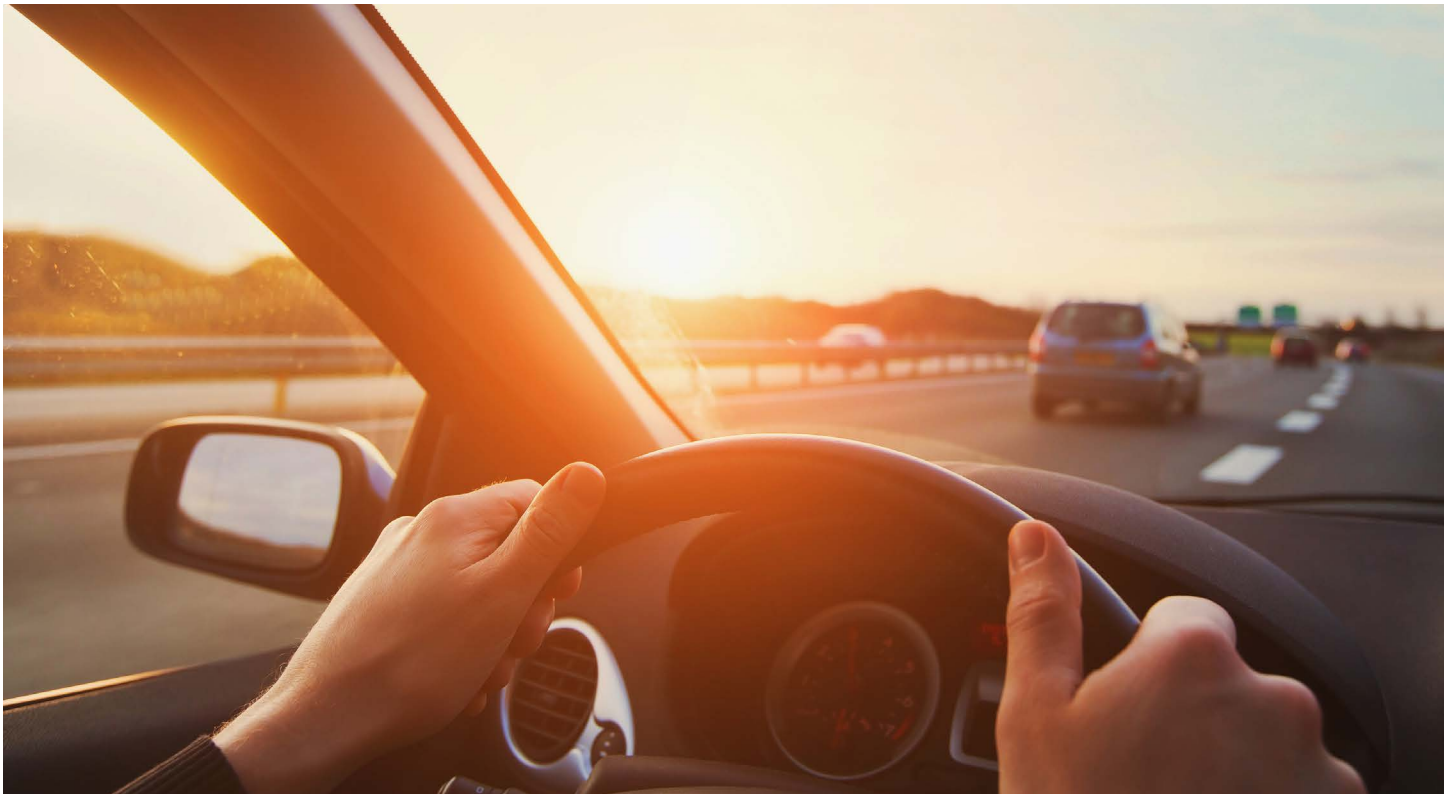
Farm vehicles, horse-drawn vehicles, ATVs/UTVs, and roadway maintenance vehicles normally travel at slower speeds. These vehicles may have a slow-moving vehicle sign (an orange triangle or flashing lights) on the back.

FOLLOWING ANOTHER VEHICLE

Many collisions are caused by following the vehicle ahead too closely. You must be able to stop before hitting anything in front of you. Higher speeds require greater stopping distances. Keep this in mind when following another vehicle. The safest and easiest way to judge a safe following distance is to use the "Three-Four Second Rule" *(see figure 4.2 on page 41)*. This will keep the vehicles in front of you far enough ahead that you will be able to safely stop if needed.

TAILGATING

If you are being tailgated, move slightly to the right and give the tailgater a better view of what is ahead and signal early for turns, stops, or lane changes. Try slowing down and encouraging the driver behind you to pass. If all else fails, pull out of the traffic flow.



4.13 COMMUNICATING - HEADLIGHTS, HORN, & EMERGENCY SIGNALS

Some drivers do not always pay attention to what is going on around them. Crashes often happen because one driver does not see another driver, or when one driver does something the other driver does not expect. It is important that drivers let other road users know they are there, and what they plan to do.

HEADLIGHTS

Besides helping you to see at night, headlights help other drivers see you. Turn on your headlights whenever you are having trouble seeing other vehicles, as they are likely having trouble seeing you. Examples include fog, heavy rain, or snow.

Many vehicles are equipped with headlights that turn on automatically, but in some conditions, such as daytime snowstorms, the ambient light is bright enough your automatic headlights must be turned on manually.

Iowa law requires the use of both headlights from sunset to sunrise or whenever visibility is 500 feet or less, (fog, heavy rain, snow, etc.). A good rule of thumb is to turn your headlights on whenever you turn your windshield wipers on.

HORN

In some cases, your horn can be used to get the attention of another driver and prevent a crash. Use your
horn when:

- A pedestrian or bicyclists appears to be moving into your lane of travel.
- You are passing a driver who starts to turn into your lane.
- There is a driver who is not paying attention or who may have trouble seeing you.
- You are coming to a place where you cannot see what is ahead, such as exiting a narrow alley.
- Another car is in danger of hitting you.
- You need to alert other vehicles, drivers, pedestrians, or animals of your presence.
- You have lost control of your vehicle and are moving toward someone.

HAZARD LIGHTS

If your vehicle breaks down on the road, make sure that other drivers can see it. All too often collisions occur because a driver did not see a stalled vehicle until it was too late to stop. Here are some guidelines if you are having vehicle trouble and must stop.

- If possible, safely move your vehicle off the road and away from traffic.
- Turn on your emergency hazard lights to show you are having trouble.
- If you cannot get your vehicle off the roadway, try to stop where other drivers have a clear view of your vehicle. Do not stop just over a hill or just around a curve.
- If you are stalled in a traveled lane, you and your passengers should exit the vehicle quickly and stand in a safe area; when possible, away from the shoulder of the road and far from moving vehicles.
- Notify authorities that you or someone else has broken down.