This chapter includes information on basic skills, driving in traffic and vehicle and personal safety.

What you’ll learn

After studying this chapter you’ll be able to:

- describe various techniques for driving safely in traffic
- define the term danger zone and describe how to reduce the size of your danger zone
- describe the factors that affect your vehicle’s turning characteristics and techniques to help you turn safely
- describe how to back up safely
- describe when and how to shift gears
- describe how to handle each of the following special situations: passing and being passed, parking, intersections, crossing railway lines, various weather conditions and night driving
- identify potential vehicle and personal safety issues and describe how to reduce risks for yourself and other road users.

Sharing the road

When you’re sharing the road with other vehicles, it’s important that you know how to follow safely, deal with tailgaters and identify your danger zone. These sections provide information that can help you drive safely when there are pedestrians, cyclists and other vehicles on the road. This chapter will also further develop the road safety topics introduced in chapter 2.

Following distance

You can establish a safe following distance using different rules. The rule you should use depends on the type of vehicle you’re driving.

In all cases, rules for determining how closely you can safely follow another vehicle apply to ideal driving conditions. If conditions are less than ideal, increase your following distance. Driving conditions are affected by:

- road conditions
- vehicle conditions
- your physical and mental condition
- traffic conditions
- lighting conditions
- weather conditions.
Taxi, limousine, ambulance or van

Drivers of passenger cars and light trucks should use the two-second rule for keeping a safe following distance:

1. Watch the vehicle ahead pass some checkpoint on the roadway, such as an overpass or sign post.
2. Start to count: “One thousand and one, one thousand and two.” That’s two seconds.

If the checkpoint is reached before the count is finished, your following distance isn’t enough — drop back, pick a new checkpoint and count again.

If you’re following a motorcycle, you’ll need to leave even more space because motorcycles can stop quickly.

Lengthen your following distance on the highway and when road or weather conditions are poor.

Bus, truck or other heavy vehicle

Since you need more time and distance to stop if you’re driving one of these vehicles, keep at least a five-second following distance.

When conditions are less than ideal, increase the number of seconds and adjust your following distance.

Traffic flow

Your travelling speed depends on driving conditions, including traffic flow. You need to match your travelling speed with the traffic flow while staying within the speed limit.

Driving faster than the flow

If you drive faster than the traffic flow, you increase your chance of crashing into vehicles in front of you.

- You won’t be able to maintain a safe following distance, which means you will be unable to stop quickly and safely.
• You increase your chance of making a wrong decision. Driving faster than
  the traffic around you requires more lane changes. Each lane change
  represents a problem that requires quick decision-making. The more
  decisions you make, the greater the chance you’ll make a wrong one.

• You’ll tire more quickly. Driving faster than the traffic flow creates tension
  and causes mental and physical fatigue.

Maintaining a steady speed, within legal limits, at a safe following distance will
help give you the time needed to react in an emergency situation. Driving at
a steady speed also saves money and helps the environment by reducing the
amount of fuel your vehicle burns.

**Driving slower than the flow**

If you drive slower than the traffic flow, you increase your chance of a collision
with vehicles travelling behind or beside you. Other drivers will become
impatient and follow too closely or try to overtake your vehicle. After passing,
they may cut in leaving you with little or no room for a quick stop.

Large vehicles tend to accelerate and travel more slowly than small vehicles.
When you’re unable to keep up with the traffic flow, you must travel in the
right lane.

**Tailgaters**

Drivers of large vehicles must rely on outside mirrors for rear vision. You may
not be able to see tailgaters who sit in the blind spot directly behind you.

You also may not always be able to prevent a rear-end collision caused by
these drivers, but if stops are gradual, the impact may be much less.

Tailgaters are easiest to deal with when they’re in front of you. It’s a good
safety practice to allow tailgaters to pass. Watch for these drivers by checking
your rear-view mirror frequently.

When you drive a large commercial vehicle on a highway, leave at least 60 m
(200 ft) between your vehicle and other large commercial vehicles.

Always use the right lane when you’re travelling more slowly than other traffic
and are going up or down a hill where a passing lane is provided. In some
cases, signs require slower drivers to keep to the right lanes.

Vehicles may build behind you when you’re driving on a one-lane road and
travelling more slowly than other traffic, such as when going up a hill. Allow
them to pass as soon as it’s safe.

It’s a good safety practice to use your four-way flashers when you’re driving
slowly up or down a hill (some companies require this).

Vehicles, machinery or combinations of vehicles that travel at less than
40 km/h should display a red triangle **slow moving vehicle** sign. Don’t put
this sign on any stationary object or on any vehicle that’s travelling faster than
40 km/h.
Construction zones

Look for construction zones ahead and look out for traffic-control persons, construction workers and equipment. Remember, road construction doesn’t just occur in the daytime.

In some construction zones, you may need to wait for a pilot car to escort you through the work zone. Leave plenty of following distance between your vehicle and the vehicle immediately ahead. Avoid changing lanes in a construction zone. Also leave space between you, the construction crews and their equipment.

Check radio, television and websites for the latest in traffic reports and updates to find out what’s happening along your area roads and intended route. Consider taking an alternate route.

Danger zones

The section of road a vehicle travels through before it can stop is called the vehicle’s danger zone because it’s physically impossible for you to stop in time to avoid a collision with any object or person.

As your speed increases, the length of your danger zone increases. Less than ideal road conditions, such as rain, snow, ice or gravel, increase the length of your danger zone. Driving fast in these road conditions increases your danger zone even more.

Reduce your danger zone by slowing down. Remember, it’s easier to keep out of trouble than get out of trouble.

Your danger zone is reduced when your vehicle’s speed is reduced. You also reduce your danger zone when you cover the brake pedal with your foot any time you see a potential hazard developing (for example, whenever you approach an intersection).
Removing your foot from the accelerator and putting it lightly on the brake pedal when you first see a potential hazard in your danger zone reduces your reaction time. Your speed is slowing so you have a better chance of stopping before the crosswalk rather than in the intersection.

**Manoeuvring**

There are many different types of commercial vehicles and each type has its own driving characteristics. In most cases, commercial drivers operate vehicles that are larger, heavier and longer than others on the road. The extra size, weight and length affect the way these vehicles move, especially around turns and while backing up.

**Steering into turns**

Steering and handling characteristics are different for conventional, cab-over and forward-control vehicles.

In a conventional design, the driver’s seat and steering wheel are positioned behind the steering axle. In a cab-over design, the driver’s seat is above the steering axle. In a forward-control design, the driver’s seat is in front of the steering axle. The position of the driver’s seat is different in each of these configurations, which affects your viewpoint when turning. You’ll start your turn at a slightly different point on the turning path depending on the type of vehicle you’re driving (conventional, cab-over or forward-control).

These steering differences are apparent even in small vehicles. In large and long vehicles the differences are magnified. The length of your vehicle and the number of articulation points it has will also affect where you start your turn. You’ll notice these differences and must account for them when you switch from one type of vehicle to another.

**Wheel positions during turns**

Steering a large vehicle has the same basic principles as a passenger vehicle. But steering a large or combination vehicle can be much more complicated.

As the operator of a large vehicle, you’ll need to consider these two factors which determine the sharpness of your vehicle’s turn:

**Turning radius**

How sharply you can turn the front wheels of your vehicle depends on the make and model of the vehicle you’re driving. In all cases, the wheel on the inside of the curve (closest to the direction you’re turning) will turn more sharply than the wheel on the outside of the turn. The inside wheel will have a shorter turning radius than the outside wheel.
The radius is the distance from the centre of a circle to the edge of the circle. When a vehicle turns a corner, it’s travelling on a curve. If that vehicle were to continue on the same path, it would eventually drive in a complete circle. The distance from the centre of that imaginary circle to the vehicle’s wheel is the turning radius.

A vehicle’s rear tires have a different turning radius than its front tires. It is important to know how to judge the turning radius of your front tires to prevent your vehicle’s rear tires from cutting the corner.

**Off track**

When a vehicle moves around a curve, the rear wheels follow a different path than the front wheels. The difference between the path of the front wheels and the path of the rear wheels is called off track. The greater the distance between the front wheels and the rear wheels of a vehicle, or a combination of vehicles, the greater the amount of off track.

Each set of wheels behind the front wheels turn with some off tracking. A combination vehicle displays several sets of off tracking. The rear wheels of the tractor turn somewhat off track from the front wheels. The rear wheels of the trailer turn with even more off tracking.

**Wheelbase**

Wheelbase is the distance between the front wheels and the rear wheels of a vehicle.

Vehicles with longer wheelbases have more off tracking than those with short wheelbases. A combination vehicle will usually have more off tracking than a single-unit vehicle.
A single-unit vehicle and a truck-tractor and semi-trailer demonstrate different turning characteristics.

A single-unit vehicle has different turning characteristics than a truck-tractor and a semi-trailer. Each unit that has more than one set of wheels will have a turning radius and an off-track pattern within itself. The amount of off track depends on a number of factors including the wheel base of the units and the location of the pivot points between the truck and trailers (for example, draw bar connection point or location of the fifth wheel). The longer the wheel base, and the longer the draw bar length or the farther back the fifth wheel is mounted, the greater the amount of off track.

Inertia affects a moving vehicle in a curve.
Curves and turns

Several forces work against you while you move your vehicle around a curve or through a turn. You need to be aware of these and approach each curve at a speed that allows you to safely control your vehicle.

Inertia is the tendency for moving objects — in this case you and your vehicle — to continue to move forward in a straight line. When you brake, inertia tries to keep your vehicle moving. When you go around a curve, inertia tries to keep you going in a straight line.

The faster you’re going and the heavier your vehicle, the more inertia pushes your vehicle away from the path of the curve. The faster you’re travelling, the more difficult it’ll be to keep your vehicle on the path of the curve.

Traction is the grip your tires have on the road. The amount of traction your tires have with the road’s surface determines the amount of control you can maintain over your vehicle. If you enter a curve too quickly and try to slow down by applying your brakes, you may lose traction, causing your vehicle to skid, roll over or jackknife.

Reduce your speed before you enter a curve. Enter each curve at a speed that doesn’t require you to brake and allows you to apply gradual power while you’re in the curve. Make sure you obey any suggested speed signs in curves to avoid tipping over.

Curves

When you curve to the right, keep the front wheels close to the centre line so that your rear wheels don’t drop off the pavement or go onto the pavement shoulder.