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Study Guide

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CHAPTER 1

Habits You Must Develop

1.1 Seat Belt Requirements for Heavy Vehicles

In Québec, drivers of heavy vehicles must wear the seat belts installed by the vehicle manufacturer. Seat belts greatly reduce deaths and injury severity in accidents by preventing drivers from hitting the steering wheel or windshield and from being thrown from the vehicle.

- ✓ Heavy vehicle drivers must wear manufacturer-installed seat belts
- ✓ Do not drive if the seat belt is missing, altered or not in working order

1.2 Alcohol and Drug Impairment Limits

Drivers are prohibited from driving a heavy vehicle when impaired by alcohol or drugs. A blood alcohol level of 80 mg per 100 ml of blood (0.08) or more while impaired results in penalties under the Criminal Code and Highway Safety Code.

- ✓ Driving with 0.08 blood alcohol or more while impaired is a criminal offence
- ✓ Alcohol/drugs and driving do not mix

1.3 Zero Tolerance Rule

If you have any alcohol or drugs in your blood, you may not drive or have care/control of a bus, minibus or taxi. Violating this zero-tolerance rule leads to a 24-hour driving prohibition for such vehicles.

- ✓ Zero alcohol/drugs allowed for bus, minibus or taxi drivers
- ✓ Violation results in a 24-hour driving prohibition

1.4 Blood Alcohol Limit of 0.05

A blood alcohol concentration of 0.05 or more prohibits driving or having care/control of a heavy vehicle, tow truck, or vehicle requiring safety mark placards under the Regulation respecting hazardous materials. This does not apply to a passenger vehicle pulling a house/tent trailer or to a motor home.

- ✓ 0.05 BAC or more prohibits driving heavy vehicles, tow trucks and placarded vehicles
- ✓ Exemption applies to passenger vehicles with house/tent trailers and motor homes

1.5 Electronic Devices While Driving

Holding any portable electronic device while driving is illegal, regardless of use. This applies to cell phones, MP3/multimedia players, satellite radios, electronic tablets, and screens/devices displaying non-driving information, emails, or internet. It does not apply to on-duty emergency vehicle drivers.

- ✓ Simply holding a portable electronic device while driving is illegal regardless of use
- ✓ Exemption applies only to on-duty emergency vehicle drivers

1.6 Staying Alert and Highway Hypnosis

Inattention is the cause of most injury accidents involving trucks. Fatigue is the main cause; distraction, anger, frustration, stress, alcohol, medication and drugs also contribute. Monotonous driving can cause 'highway hypnosis' — pull over to rest and take breaks every two hours if possible.

- ✓ Fatigue is the main cause of inattention-related truck accidents
- ✓ Take a break every two hours or whenever you feel the need to stop

1.7 Anticipate: Scan, Identify, Decide, Act

Anticipating means planning ahead based on current conditions. SCAN and OBSERVE the environment (do not fixate on one point; look ahead, sides, and mirrors). IDENTIFY dangers by reading the road and keeping space. DECIDE the best course of action. ACT by performing the right manoeuvre at the right moment.

- ✓ Do not stare at a single fixed point; scan ahead, sides and mirrors
- ✓ Use the SCAN, IDENTIFY, DECIDE, ACT strategy to anticipate hazards

1.8 Screens, GPS and Electronic Log Books

GPS is useful but a distraction source and must be used with discernment. Program the system or enter information before leaving. Electronic log books must only be used when the vehicle is parked in a safe location.

- ✓ Program GPS and enter information before departure
- ✓ Use electronic log books only when parked in a safe location

1.9 Meaning of 'While Driving'

A driver stopped to comply with signage or due to traffic (red light, traffic jam) is still considered to be driving and cannot use a hand-held electronic device. A driver who makes a safe and legal stop by the side of a road to use a device is no longer considered driving, even with the engine running.

- ✓ Waiting at a red light or in traffic counts as driving; no hand-held devices allowed
- ✓ Only a safe and legal roadside stop exempts you from the 'while driving' rule

1.10 Headrest Adjustment

Headrests, like seat belts, prevent injuries. Most heavy vehicles have stationary headrests, but adjustable ones should be properly adjusted before driving to avoid whiplash or neck injury in a collision.

- ✓ Adjust an adjustable headrest properly before driving
- ✓ Proper headrest adjustment helps prevent whiplash and neck injuries

1.11 Cooperative Driving Behaviour

Drivers must share the road and cooperate. A cooperative, courteous attitude makes driving easier for others and avoids reckless actions. Examples include adjusting speed to let others merge and using the right lane, reserving the left lane for passing.

- ✓ Adjust speed to allow other drivers to merge into your lane
- ✓ Use the right lane and reserve the left lane for passing

1.12 CB Radios Authorized

The electronic device restriction does not apply to devices installed in the vehicle where only the microphone or receiver is held. This covers shortwave two-way radios that do not allow simultaneous talk (CBs or walkie-talkies).

- ✓ Installed devices where only microphone/receiver is held are permitted
- ✓ CBs and walkie-talkies (non-simultaneous shortwave radios) are authorized

1.13 Keeping Calm and Avoiding Confrontation

Professional drivers must stay calm, collected and cooperative. If another road user acts aggressively, avoid needless confrontation by staying calm and obeying the rules of the road.

- ✓ Stay calm and obey rules when faced with aggressive drivers
- ✓ Avoid needless confrontation on the road

CHAPTER 2

In the Presence of a Flagperson

2.1 Responding to Flagperson Signs

A flagperson directs traffic where construction or maintenance work is being carried out. They use an eight-sided sign with 'Arrêt' (Stop) on one side and 'Lentement' (Slow) on the other. You must obey the flagperson's signals just as you would obey traffic signals.

- ✓ When shown the 'Arrêt' (Stop) sign, you must stop and wait for the flagperson to signal you to proceed
- ✓ When shown the 'Lentement' (Slow) sign, you must slow down and proceed with caution
- ✓ Maintain an adequate distance from the flagperson and do not endanger any person or vehicle on the site

2.2 Flagperson Traffic Direction Signs

A flagperson directs traffic on roads where construction or maintenance work is being carried out. The flagperson uses an eight-sided sign displaying 'Arrêt' (Stop) on one side and 'Lentement' (Slow) on the other. Drivers must respond appropriately to each side.

- ✓ When shown the 'Arrêt' (Stop) sign, you must stop completely and wait for the flagperson to signal you to proceed
- ✓ When shown the 'Lentement' (Slow) sign, you must slow down and proceed with caution
- ✓ Maintain an adequate distance from the flagperson and do not endanger any person or vehicle on the work site
- ✓ Look far ahead for changes in traffic or road blockages; road work may create two-way traffic on part of a highway
- ✓ Do not brake suddenly if you need to change lanes

2.3 Driving Through Road Work Zones

Look far ahead to check whether there are any changes in traffic or if part of the road is blocked. Due to road work, a portion of highway may accommodate two-way traffic over several kilometres.

- ✓ Look far ahead to detect traffic changes or blocked roadway
- ✓ Do not brake suddenly if you need to change lanes
- ✓ Be prepared for two-way traffic over sections of highway during road work

CHAPTER 3

Shifting Gears Efficiently (Chapter 3: Know Your Vehicle)

3.1 Upshifting into 2nd Gear (Double-Clutching)

Upshifting into 2nd gear on a non-synchromesh transmission requires a specific double-clutching sequence involving neutral and precise RPM control.

- ✓ Accelerate until engine reaches 950 RPM
- ✓ Press clutch to friction point (position 2), then to lower free play (position 3) releasing accelerator
- ✓ Shift into neutral (N)
- ✓ Release clutch to upper free play (position 1) to reach 650 RPM
- ✓ Press clutch to position 3 and shift into 2nd gear
- ✓ Gradually press accelerator as you release clutch
- ✓ Use same technique for higher gears

3.2 Correct RPM for Each Gear

For efficient shifting, each gear has a target RPM based on the example vehicle parameters. This helps determine the ideal moment to change gears using the tachometer.

- ✓ 1st gear: 650 RPM
- ✓ 2nd gear: 950 RPM
- ✓ 3rd gear: 1,250 RPM
- ✓ 4th gear: 1,550 RPM
- ✓ Idling speed in the example is 800 RPM

3.3 RPM Increase Needed for Shifting

To shift into a higher gear, you must reach an engine speed about 300 RPM higher than idling speed. Shifting is difficult if the difference between actual RPM and the RPM needed for the manoeuvre is lower than the RPM at idling speed.

- ✓ Add approximately 300 RPM above idling to shift
- ✓ Ideal shift point for 2nd gear is 950 RPM (650 + 300)
- ✓ Difficult to shift if RPM difference is below idling speed

3.4 Upshifting into 1st Gear

Starting the vehicle from a stop requires proper clutch pedal control through defined positions to prevent grinding and allow smooth engagement.

- ✓ Press clutch to lower free play (position 3), or clutch brake (position 4) if grinding
- ✓ Slowly release clutch to friction point (position 2) until vehicle moves
- ✓ Gradually press accelerator while gradually releasing the clutch

3.5 RPM for Higher Gears and Optimum Torque

To shift into higher gears, engine speed must be increased to maintain optimum torque after subtracting the RPM required for the manoeuvre.

- ✓ Increase engine speed to 1,500 RPM for higher gears
- ✓ Maintain optimum torque of 1,200 RPM (1,500 - 300 = 1,200)
- ✓ 300 RPM is subtracted to perform the manoeuvre

CHAPTER 4

Keep Your Eyes Open

4.1 Staying alert while driving

Driver distraction plays a role in the majority of accidents. To drive safely you must constantly be on the lookout, aware of everything happening in front of and on either side of your vehicle, with special attention to blind spots and the rearview mirror.

- ✓ Distraction is a factor in the majority of accidents
- ✓ Constantly monitor front, sides, blind spots and rearview mirror

4.2 Looking well ahead

Heavy vehicle manoeuvres such as stopping or changing lanes take longer and require greater distance than in a car, so you must look far ahead to ensure enough space to execute each manoeuvre safely and maintain control. Looking far ahead prevents being caught off guard.

- ✓ Scan the distance you will cover in the next 12 to 15 seconds
- ✓ On highways look about one-half kilometre ahead
- ✓ In cities/residential areas look about the distance between two intersections
- ✓ Avoid staring off into the distance

4.3 Checking blind spots

Even with convex mirrors, certain road areas cannot be seen, especially blind spots. Look back at the areas behind you on right and left not covered by mirrors. Since your vehicle is bigger than others, checking blind spots for smaller vehicles, cyclists and pedestrians is critical.

- ✓ Check blind spots before changing lanes, turning, backing up or starting to move
- ✓ Look back at areas on right and left not covered by rearview mirrors
- ✓ Watch especially for smaller vehicles, cyclists and pedestrians

4.4 Checking rearview mirrors

Know what is happening around your vehicle at all times. Use rearview mirrors to check traffic beside and behind you at regular intervals — every 10 or 12 seconds in normal conditions and more often in problem situations. Take quick glances rather than staring, since the road ahead is constantly changing.

- ✓ Check mirrors every 10 to 12 seconds in normal conditions, more often in problem situations
- ✓ Take quick glances; do not stare in the mirror too long
- ✓ Convex mirrors provide a wide-angle view but make objects look smaller and farther away

4.5 Signalling your intentions

Other drivers do not know your plans unless you signal. Signal clearly once you are sure you can make your move safely to prevent problems and avoid accidents.

- ✓ Signal your intentions clearly using turn signal lights
- ✓ Only signal once you are sure the move can be made safely

4.6 Look Well Ahead When Driving

Heavy vehicle manoeuvres like stopping or changing lanes take longer and require more distance than in a car. Looking far ahead protects you from being caught off guard and helps maintain control at all times. You should scan the distance you will cover in the next 12 to 15 seconds without staring off into the distance.

- ✓ Scan the distance you will cover in the next 12 to 15 seconds
- ✓ On highways, look about one-half kilometre ahead
- ✓ In cities/residential areas, look about the distance between two intersections
- ✓ Time interval method to estimate distance works at all speeds

4.7 Checking Blind Spots

Even with convex rearview mirrors, certain areas of the road cannot be seen, especially blind spots. To check blind spots, look back at the areas behind you on your right and left not covered by mirrors. Because your vehicle is larger, it is even more important to check for smaller vehicles, cyclists or pedestrians.

- ✓ Check blind spots before changing lanes, turning, backing up or starting to move
- ✓ Look back at areas on your right and left not covered by mirrors
- ✓ Be especially alert for smaller vehicles, cyclists and pedestrians in blind spots

4.8 Checking Rearview Mirrors

You should know what is happening around your vehicle at all times. Use rearview mirrors to check traffic beside and behind you at regular intervals. Take quick glances shifting eyes from the road ahead to the mirror and back, and avoid staring in the mirror too long because the situation ahead constantly changes.

- ✓ Check rearview mirrors every 10 to 12 seconds in normal conditions
- ✓ Check more often in problem situations
- ✓ Take quick glances only; do not stare in the mirror too long

4.9 Signalling Your Intentions

Other drivers do not know your plans unless you tell them. Signal intentions clearly once you are sure you can make the move safely. When turning, signal as soon as other drivers will not mistake your intentions, leave signals on until the manoeuvre is complete, and start signalling before slowing down (unless slowing so far in advance would confuse others).

- ✓ Signal turns as soon as other drivers will not mistake your intentions
- ✓ Do not turn off signals until the manoeuvre is complete
- ✓ Start signalling your turn before you begin slowing down
- ✓ Signal lane changes well in advance before moving gradually into the adjacent lane
- ✓ Use brake lights to warn of slowing/stopping and avoid braking abruptly

4.10 Watch traffic close to you too

Looking far ahead does not mean ignoring what is happening closer. Keep an eye on traffic flow and vehicles about to merge, change lanes or turn. Anticipating events in advance lets you adjust speed and avoid abrupt braking.

- ✓ Monitor vehicles about to merge, change lanes or make a turn
- ✓ Anticipate events to avoid braking abruptly

4.11 Understanding what mirrors show

Rearview mirrors let you quickly see an overheating or burning tire, and on some vehicles allow you to check the semi-trailer and cargo to make sure it is well secured. Convex mirrors distort distance and size, so keep this in mind when changing directions.

- ✓ Use mirrors to detect overheating or burning tires and secure cargo
- ✓ Remember convex mirrors make objects appear smaller and farther away

4.12 Signalling when turning

Signal a turn as soon as possible so other drivers can make allowance and avoid getting in your way. Turn signals on as soon as you can be sure others won't mistake your intentions, leave them on until the manoeuvre is complete. Start signalling before slowing down unless doing so far in advance could confuse others.

- ✓ Signal turns as early as possible without confusing other drivers
- ✓ Leave signal on until the manoeuvre is completed
- ✓ Start signalling before slowing down, unless too far in advance would confuse others

4.13 Signalling when changing lanes and stopping

Signal your intention to change lanes well in advance, make the usual checks, then move gradually into the adjacent lane. Brake lights warn others when slowing or stopping — pay close attention to other vehicles and avoid abrupt or frequent stops.

- ✓ Signal lane changes well in advance and move gradually
- ✓ Avoid braking abruptly; brake lights warn others of slowing/stopping

4.14 Remain Observant of Close Traffic

Looking far ahead does not mean ignoring what is happening closer to you. You must keep an eye on traffic flow and on vehicles about to merge, change lanes or turn. By anticipating events in advance you can perform manoeuvres, adjust speed and avoid braking abruptly.

- ✓ Keep an eye on traffic flow and merging/turning vehicles
- ✓ Anticipate events well in advance to avoid abrupt braking
- ✓ Adjust your speed based on what you observe ahead

4.15 Understanding Convex Mirrors

Rearview mirrors also let you quickly spot an overheating or burning tire and check your semi-trailer and cargo. Most heavy vehicles have convex rearview mirrors that provide a wide-angle view but make everything look smaller and farther away.

- ✓ Convex mirrors make objects appear smaller and farther away
- ✓ Use mirrors to check for tire fires and cargo security
- ✓ Account for the convex distortion when changing directions

CHAPTER 5

What Should You Do When You Get a Flat Tire?

5.1 Ceasing Operation After a Flat Tire

If you confirm you have a flat tire, you are legally required to stop operating your vehicle until the tire is repaired or replaced. Do not continue driving on a flat.

- ✓ You must cease operating your vehicle until the tire is repaired or replaced
- ✓ Pull over and check for yourself to determine if you have a flat

5.2 Flat on Front Tire or Single-Wheeled Rear Tire

A flat in a front tire, or in a rear tire on a single-wheeled (wide-tread) vehicle, can cause loss of control. When a front tire goes flat, the vehicle veers toward the damaged side. A flat rear tire usually makes the vehicle unstable. You must compensate for the imbalance to bring the vehicle to a safe stop.

- ✓ A front flat causes the vehicle to veer toward the side of the damaged tire
- ✓ A rear flat on a single-wheeled vehicle usually makes the vehicle unstable
- ✓ Grip the steering wheel firmly to steer out of the traffic lane
- ✓ Slowly ease off the accelerator and gradually apply brakes; do NOT slam on the brakes
- ✓ Maintain speed and ease off the road while gradually reducing speed

5.3 Flat Tire on a Dual-Wheeled Vehicle

A flat tire on a dual-wheeled semi-trailer may have very little impact on driving because the vehicle still maintains its stability. However, the extra weight transferred to the other wheel may damage it. A blowout on one of the tractor's rear tires may cause the rear end of the tractor to vibrate.

- ✓ A flat on a dual-wheeled vehicle has little impact because stability is maintained
- ✓ Extra weight on the remaining wheel may damage it
- ✓ A blowout on a tractor rear tire causes the rear end to vibrate
- ✓ You must cease operating the vehicle until the tire is repaired or replaced

5.4 Flat Front Tire or Single-Wheel Rear Tire

A flat in a front tire or in a rear tire on a single-wheeled (wide-tread) vehicle can cause loss of control. A flat front tire makes the vehicle veer toward the damaged side. A flat rear tire makes the vehicle unstable. You must adjust your driving to compensate for the imbalance and reach a safe stop.

- ✓ A flat front tire causes the vehicle to veer toward the damaged side
- ✓ A flat rear tire on a single-wheeled vehicle causes instability
- ✓ Grip the steering wheel firmly to steer out of the traffic lane
- ✓ Slowly ease off the accelerator and gradually apply the brakes to stop safely
- ✓ Do not slam on the brakes; maintain speed and ease off the road while gradually slowing

5.5 Flat Tire on Dual-Wheeled Vehicle

A flat tire on a dual-wheeled semi-trailer usually has little impact on driving because the vehicle maintains stability. However, extra weight transferred to the remaining wheel may damage it. A blowout on one of the tractor's rear tires may cause the rear end of the tractor to vibrate.

- ✓ A flat on a dual-wheeled semi-trailer maintains stability but may damage the remaining wheel due to extra weight
- ✓ A rear tractor tire blowout may cause the rear end of the tractor to vibrate
- ✓ The best way to confirm a flat, besides noise or vibration, is to pull over and check

5.6 Detecting a Flat Tire

Besides noise or vibration, the best way to determine whether you have a flat tire is to pull over and check for yourself. If you have a flat, you must stop operating the vehicle until the tire is repaired or replaced.

- ✓ Pull over and check for yourself to confirm a flat tire
- ✓ Watch for noise or vibration as warning signs
- ✓ Do not continue driving on a confirmed flat tire

CHAPTER 6

General Rules

6.1 Scope of Cargo Securement Standards Regulation

The Cargo Securement Standards Regulation establishes general standards applying to all types of cargo for road vehicles with a gross vehicle weight rating (GVWR) of 4,500 kg or more. Certain vehicles and cargo types are exempt if they meet specific conditions.

- ✓ The Regulation applies to road vehicles with a GVWR of 4,500 kg or more
- ✓ Farm tractors and bulk cargo transported in sided vehicles are generally exempt if they meet certain conditions
- ✓ Special standards apply to bulk cargo such as earth, sand, gravel, salt, bituminous concrete, road demolition waste, snow and ice

6.2 Cargo Immobilization Requirements

Cargo must be firmly secured or immobilized inside the transporting vehicle. The tiedown system must meet performance criteria to counteract forces applied to the cargo during transport.

- ✓ Cargo must be firmly secured or immobilized inside the vehicle
- ✓ The tiedown system must counteract front, rear, lateral and vertical forces
- ✓ Forces result from driver's manoeuvres, road geometry, road surface conditions and wind

6.3 Methods of Securement

Cargo may be secured by various means, and their use must be appropriate to the cargo's dimensions, shape and resistance. All components must be in proper working order.

- ✓ Securement may use structures of adequate strength, blocking systems, bracing, dunnage or dunnage bags, shoring bars, tiedowns, friction mats or a combination
- ✓ Use must be appropriate to the dimensions, shape and resistance of the cargo
- ✓ All components must be in proper working order and show no damage that could hamper performance

6.4 Driver Inspection Duties

Drivers must check the cargo and tiedown system and make appropriate adjustments before setting out and at various moments during the trip, with certain exemptions.

- ✓ Drivers must check cargo and tiedown system before departure and at various moments thereafter
- ✓ Drivers are not required to inspect cargo if it is inaccessible or sealed in a vehicle with instructions not to open it

6.5 Number of Tiedowns for Blocked Articles

When an article is blocked or immobilized by a front end structure, bulkhead, another immobilized article or another device preventing forward shifting, the number of tiedowns depends on length regardless of mass.

- ✓ An article no longer than 3.04 m requires at least one tiedown
- ✓ An article longer than 3.04 m requires one tiedown for the first 3.04 m plus one additional tiedown for each additional 3.04 m of length or fraction thereof
- ✓ These rules apply regardless of the article's mass

6.6 Number of Tiedowns for Unblocked Articles

When an article is NOT blocked or immobilized by a front end structure, blocking system or another properly secured article, tiedown requirements are based on mass and length.

- ✓ An article no more than 500 kg and no longer than 1.52 m requires at least one tiedown
- ✓ An article no longer than 1.52 m but with mass above 500 kg requires at least two tiedowns
- ✓ Any article longer than 1.52 m and no longer than 3.04 m requires at least two tiedowns regardless of mass
- ✓ Articles longer than 3.04 m require two tiedowns for the first 3.04 m plus one additional tiedown for each additional 3.04 m or fraction thereof

6.7 Working Load Limit (WLL) Certification

All tiedowns used under the Regulation must bear the manufacturer's certification of their Working Load Limit. The WLL is the maximum load the manufacturer assigns for normal use.

- ✓ All tiedowns (straps, chains, etc.) must bear the manufacturer's certification of their Working Load Limit (WLL)
- ✓ The WLL is the maximum load assigned by the manufacturer that can be applied to the tiedown under normal use
- ✓ Uncertified straps may not be used for securement under the Regulation

6.8 Total WLL Requirement

The sum of all tiedown WLLs used to secure cargo is the total WLL, which must meet a minimum percentage of the cargo's mass.

- ✓ The total WLL of tiedowns in a system cannot be less than 50% of the cargo's total mass secured by that system
- ✓ Example: for cargo of 2,268 kg, the tiedown system must have a capacity of 1,134 kg or more

6.9 Securement in Closed vs Flatbed Vehicles

Cargo in closed vehicles must be distributed to fill available space and be immobilized; flatbed cargo must be secured with tiedowns.

- ✓ In a closed vehicle, cargo must be distributed to cover all available space and immobilized by direct contact with walls or other cargo
- ✓ If cargo cannot fill the space, immobilization devices (blocking systems, bracings, dunnage/dunnage bags, shoring bars, tiedowns) can be used
- ✓ On a flatbed vehicle, tiedowns must be used to secure all articles to the vehicle
- ✓ Cargo in danger of shifting must be immobilized with chocks, wedges, cradles or other devices

6.10 Cargo Immobilization Requirement

Cargo must be firmly secured or immobilized inside the transporting vehicle. The tiedown system must meet performance criteria to counteract front, rear, lateral and vertical forces resulting from driver manoeuvres, road geometry, road surface conditions and wind.

- ✓ Cargo must be firmly secured or immobilized inside the vehicle
- ✓ Tiedown system must counteract front, rear, lateral and vertical forces
- ✓ Forces result from manoeuvres, road geometry, road surface conditions and wind

6.11 Approved Securement Methods

Cargo may be secured or immobilized by structures of adequate strength, blocking systems, bracing, dunnage or dunnage bags, shoring bars, tiedowns, friction mats, or a combination of these.

- ✓ Approved methods: structures, blocking systems, bracing, dunnage/dunnage bags, shoring bars, tiedowns, friction mats or combinations
- ✓ Method use must be appropriate to the dimensions, shape and resistance of the cargo
- ✓ All components must be in proper working order and show no damage that could hamper performance

6.12 Driver Cargo Check Obligations

Drivers must check the cargo and tiedown system and make appropriate adjustments before setting out and at various moments thereafter. Drivers are not required to inspect cargo that is inaccessible or sealed in a vehicle when instructed not to open the vehicle.

- ✓ Drivers must check cargo and tiedowns before departure and at intervals thereafter
- ✓ No inspection required if cargo is inaccessible or sealed and driver was instructed not to open the vehicle

CHAPTER 7

Hitching and Unhitching a Tractor and a Semi-Trailer

7.1 Importance of Correct Hitching Technique

A heavy vehicle driver must master the correct technique for hitching a semi-trailer. Any error during the hitching process or using the wrong method can cause an accident or equipment failure. You must follow the same steps and proceed in the same manner each time you hitch to save time and ensure safe driving.

- ✓ Always follow the same steps in the same manner each time you hitch a semi-trailer
- ✓ Any error or wrong method during hitching can cause an accident or equipment failure
- ✓ Mastering correct hitching technique is essential for a heavy vehicle driver

7.2 Checking the Tractor's Fifth Wheel Before Hitching

Before hitching, inspect the fifth wheel to ensure it is well lubricated, undamaged, firmly anchored, and correctly positioned for hitching. In winter, remove accumulated snow so the fifth wheel locks correctly.

- ✓ Ensure the fifth wheel is well lubricated and mechanisms show no sign of damage
- ✓ Ensure the fifth wheel is firmly anchored to the tractor chassis frame
- ✓ The fifth wheel must be tilted down towards the rear with jaws completely open
- ✓ In winter, remove any accumulated snow to ensure the fifth wheel locks correctly

7.3 Positioning the Tractor in Front of the Semi-Trailer

Check the surroundings to ensure a safe hitching location. Line the tractor up in a straight line with the semi-trailer, roll down the window to hear, and check both sides in the mirrors. Do not hitch until the tractor is lined up, then back up slowly ensuring the axle fits under the semi-trailer.

- ✓ Line the tractor up in a straight line with the semi-trailer before hitching
- ✓ Roll down the window to hear and check both sides in the outside rearview mirrors
- ✓ Do not hitch the semi-trailer until the tractor is lined up with it
- ✓ Back up slowly and make sure the axle fits under the semi-trailer

7.4 Adjusting Semi-Trailer Height for Hitching

The upper coupler plate of the semi-trailer should be slightly lower than the fifth wheel plate at its pivot point. If lower, the semi-trailer is slightly raised when hitched, making it easier for the locking mechanism to engage. Adjust height using the landing gear or tractor suspension.

- ✓ The upper coupler plate should be slightly lower than the fifth wheel plate at its pivot point
- ✓ If too high, lower the semi-trailer using the landing gear
- ✓ If too low, lower the tractor's suspension or raise the semi-trailer using landing gear
- ✓ Check the condition of the kingpin and upper coupler plate; remove the latch if necessary

7.5 Safety Procedure When Leaving the Cab

Whenever stopping during hitching, put on the tractor's parking brake, shift into neutral, switch on hazard lights and parking lights, and climb down from the cab using three support points.

- ✓ Put on the tractor's parking brake and shift into neutral before leaving the cab
- ✓ Switch on hazard lights and parking lights
- ✓ Always climb down from the tractor cab using three support points

7.6 Hitching the Semi-Trailer

Back the tractor up slowly under the semi-trailer, checking mirrors, until the kingpin is positioned inside the fifth wheel. This must be done correctly so the locking mechanism engages and to prevent the kingpin striking hard against the fifth wheel. Test the lock by trying to move forward and stop as soon as you feel resistance.

- ✓ Back up slowly until the upper coupler kingpin is positioned inside the fifth wheel
- ✓ Perform correctly to ensure the locking mechanism engages and prevent kingpin striking hard
- ✓ Check the lock by trying to move the tractor forward; stop as soon as you feel resistance
- ✓ Before climbing down, switch on the semi-trailer's hazard, parking and clearance lights

7.7 Inspecting the Coupling and Completing Procedure

Look under the semi-trailer to check the kingpin is fully inserted into the jaws (use a flashlight) and that the fifth wheel locking mechanism is in the lock position. If it does not lock, ask a mechanic. Connect indicator lights and brake hoses safely, raise the landing gear, and turn on air suspension if needed.

- ✓ Check the kingpin is fully inserted into the jaws, using a flashlight if necessary
- ✓ Check the fifth wheel locking mechanism is in the lock position; if it does not lock, ask a mechanic
- ✓ Connect indicator lights and brake hoses ensuring they cannot be damaged by vehicle movements
- ✓ Raise the landing gear and place the crank in the bracket

7.8 Steps to Prepare for Unhitching

Put on both tractor and semi-trailer parking brakes, shift into neutral, and climb down using three support points. Check the semi-trailer condition, lower the landing gear until firmly braced against the ground, unhook brake hoses and indicator lights connecting them to dummy couplers, then pull the fifth wheel release lever(s) to the open position.

- ✓ Put on the tractor and semi-trailer parking brakes and shift into neutral
- ✓ Lower the landing gear until it is braced firmly against the ground
- ✓ Unhook brake hoses and indicator lights and connect them to the dummy couplers behind the cab
- ✓ Pull the fifth wheel release lever(s) until in the open position

7.9 Unhitching the Tractor from the Semi-Trailer

Move the tractor forward approximately 15 cm to release the kingpin and stop. Lower the tractor's air suspension and move forward slowly, stopping while the last axle is still under the semi-trailer so it will be supported if the landing gear fails or sinks. Check the semi-trailer is immobilized before moving away, then turn the suspension back on.

- ✓ Move the tractor forward approximately 15 cm to release the kingpin, then stop
- ✓ Lower the tractor's air suspension and move forward slowly
- ✓ Stop while the last axle is still under the semi-trailer to support it if the landing gear fails
- ✓ Check that the semi-trailer is immobilized before driving forward or climbing down

7.10 Checking the Fifth Wheel Before Hitching

Before hitching a semi-trailer, the tractor's fifth wheel must be inspected to ensure it is safe and ready to receive the kingpin. Any error at this stage can cause an accident or equipment failure.

- ✓ Make sure the fifth wheel is well lubricated with no signs of damage
- ✓ Make sure the fifth wheel is firmly anchored to the tractor chassis frame
- ✓ Fifth wheel must be tilted down towards the rear with jaws completely open
- ✓ In winter, remove any accumulated snow so the fifth wheel locks correctly

7.11 Positioning the Tractor for Hitching

The tractor must be correctly lined up with the semi-trailer before backing under it, using mirrors and hearing to confirm alignment on both sides.

- ✓ Line the tractor up in a straight line with the semi-trailer
- ✓ Roll down the window and check both outside rearview mirrors before backing up
- ✓ Do not hitch the semi-trailer until the tractor is lined up with it
- ✓ Back up slowly and ensure the axle fits under the semi-trailer

7.12 Performing the Hitch

Backing under the semi-trailer must be done correctly to prevent the kingpin from striking the fifth wheel and to ensure the locking mechanism engages.

- ✓ Back up slowly while checking outside mirrors until the kingpin is inside the fifth wheel
- ✓ Check the fifth wheel is locked by trying to move the tractor forward and stopping at resistance
- ✓ Put on the parking brake and shift into neutral
- ✓ Before climbing down, switch on the semi-trailer's hazard, parking and clearance lights
- ✓ Always climb down using three support points

7.13 Inspecting the Coupling and Completing the Hitch

After hitching, a physical inspection under the trailer confirms the kingpin is fully engaged and the lock is set, followed by connecting services and raising the landing gear.

- ✓ Look under the semi-trailer to confirm the kingpin is fully inserted into the jaws (use a flashlight)
- ✓ Confirm the fifth wheel locking mechanism is in the lock position; if it does not lock, call a mechanic
- ✓ Connect indicator lights and brake hoses so they cannot be damaged by movement
- ✓ Raise the landing gear and stow the crank in the bracket
- ✓ Turn on the semi-trailer's air suspension by hand if necessary

7.14 Unhitching a Semi-Trailer with Air Suspension

Choose a firm, level location before unhitching so the ground can support the semi-trailer weight, then prepare the trailer and release the fifth wheel.

- ✓ Choose ground firm and flat enough to support the semi-trailer's weight
- ✓ Line the tractor up straight, set both parking brakes and shift into neutral
- ✓ Lower the landing gear until it is braced firmly against the ground
- ✓ Unhook brake hoses and indicator lights and connect them to the dummy couplers behind the cab
- ✓ Pull the fifth wheel release lever(s) to the open position

7.15 Releasing the Tractor from the Semi-Trailer

The tractor is moved forward slightly to release the kingpin, its suspension lowered, then driven out while keeping the last axle under the trailer for safety.

- ✓ Move the tractor forward approximately 15 cm to release the kingpin, then stop
- ✓ Lower the tractor's air suspension and move forward slowly
- ✓ Stop while the last axle is still under the semi-trailer to support it if landing gear fails
- ✓ Confirm the semi-trailer is immobilized before driving fully clear
- ✓ Slowly move away and turn the tractor's suspension back on

7.16 Choosing a Location to Unhitch

Before unhitching, ensure you are in a good spot. Choose an area where the ground is firm enough and flat enough to support the weight of the semi-trailer, preventing the landing gear from sinking.

- ✓ Choose an area where the ground is firm enough and flat enough to support the semi-trailer
- ✓ Line the tractor up straight with the semi-trailer before unhitching

CHAPTER 8

Chapter 10 – Driving a Longer Combination Vehicle (LCV): Equipment Requirements

8.1 Load Placement Between Semi-Trailers

To maintain stability, the heavier loaded semi-trailer must be positioned closest to the tractor, except when weights are nearly equal.

- ✓ Semi-trailer with greatest total loaded mass must always be hitched to the tractor
- ✓ Exception applies where weight difference between the two semi-trailers is less than 10%

8.2 Second Semi-Trailer Length Limits

For all types of double trains, the length of the second semi-trailer is strictly regulated between a minimum and maximum measurement to ensure stability and legal compliance.

- ✓ Maximum length of second semi-trailer is 16.2 m
- ✓ Minimum length of second semi-trailer is 12 m
- ✓ Applies to all types of double trains

8.3 Driver Monitoring System Requirement

An LCV must be equipped with a device that tracks the driver's behaviour and records driving data. This is used by enforcement officers to verify safe operation.

- ✓ LCV must have a device to track driver's behaviour
- ✓ Device must record wide variations in speed
- ✓ Device must record date, time and speed data

8.4 LONG Warning Signage Requirements

A warning sign with the word 'LONG' must be placed on the rear of the second semi-trailer to alert other road users to the vehicle's length. Specific size and condition standards apply.

- ✓ Sign must bear the word 'LONG' and be placed on rear of second semi-trailer
- ✓ Sign must be 230 to 245 cm by 30 cm in size
- ✓ Sign must be rigid and free of any object, substance or dirt
- ✓ Sign not required for an LCV made up of tractor, semi-trailer and tandem axle dolly with no semi-trailer hitched

8.5 Straight-Line Travel Tracking Limit

To ensure the LCV tracks properly and safely, neither semi-trailer may swing excessively out of line with the tractor when travelling straight.

- ✓ Neither semi-trailer may swing more than 80 mm out of line with the tractor
- ✓ Limit applies to either side when travelling in a straight line

8.6 Dolly Braking and Safety Requirements

A dolly used in an LCV must have braking enhancement equipment, and C double train dollies must meet federal safety standards.

- ✓ Dolly must have a pilot relay valve to boost braking signal of the second semi-trailer
- ✓ For a C double train, dolly must meet section 903 of the Motor Vehicle Safety Regulation under the Motor Vehicle Safety Act

8.7 Tractor Axle and Spacing Requirements

The tractor of an LCV must have a specific axle configuration and spacing measurements to ensure safe operation of the long combination.

- ✓ Tractor must have a front single axle and a rear tandem axle
- ✓ Interaxle spacing must be at least 3.5 m (single axle rotation axis to first tandem axle rotation axis)
- ✓ Wheelbase must be 6.2 m or less (single axle rotation axis to centre of tandem axle)

8.8 Semi-Trailer Axle Configuration Rules

The first and second semi-trailers of various train types have specific axle group requirements depending on train configuration and manufacture date.

- ✓ First semi-trailer of a B train must have a tandem axle or triple axle
- ✓ First semi-trailer of an A or C train must have a tandem axle, triple axle, or four-axle group with 32,000 kg load limit (class B.44 or B.45)
- ✓ Second semi-trailer of all LCVs must have a tandem axle or triple axle
- ✓ Interaxle spacing of tandem/triple axle must not exceed 1.85 m
- ✓ First semi-trailer of A or C train made before March 1, 1997 may use any tandem/triple combination and interaxle spacing rules do not apply

CHAPTER 9

1 - Coupling Devices

9.1 Coupling Device Components Inspection

Covers all coupling devices other than a fifth wheel. Inspect the components of the coupling device such as the drawbar ring and pintle hook. A converter dolly uses two types of coupling devices: a fifth wheel device and a pintle hook/drawbar ring device — both must be checked. Inspect on both sides of the combination, facing the coupling device, checking the tractor vehicle (pintle hook, locking mechanism) and the vehicle being pulled (ring, drawbar).

- ✓ Defect 1.F (major): When vehicles are hitched, a coupling component is missing, improperly secured, cracked, misshapen or deteriorated to the point of risk of breakage or separation
- ✓ The pintle hook locking mechanism must be in proper working order to avoid separation of the combination
- ✓ A converter dolly requires checking both a fifth wheel device and a pintle hook/drawbar ring device

9.2 Safety Fasteners and Coupling Components

Check for the presence and condition of safety fasteners or coupling components (steel cables, chains, hooks, rings to which chains attach). Inspect between the tractor vehicle and the trailer. Safety fasteners are mandatory when the trailer is not equipped with emergency brakes that enable the trailer to stop if separation occurs.

- ✓ Defect 1.2 (minor): A safety fastener or coupling component is missing, deteriorated, or improperly attached
- ✓ Safety fasteners are mandatory when the trailer lacks emergency brakes capable of stopping it upon separation

CHAPTER 10

18 - Hydraulic Brake System

10.1 Master Cylinder Reservoir Fluid Level Check

The master cylinder reservoir must be checked to verify the service brake fluid level. Check the fluid level using the indicator on the reservoir. If there is no indicator, open the reservoir to check the fluid level. Some reservoirs require a tool to be opened. If a reservoir has two caps, both compartments must be checked. In a combination of vehicles where each vehicle has hydraulic brakes, the reservoir of each vehicle must be checked. When opening the reservoir, clean around the opening to avoid contaminants, properly replace the seal, and tighten the cap.

- ✓ Major defect (18.A): master cylinder fluid level is less than one-quarter of the maximum level prescribed by the manufacturer
- ✓ Minor defect (18.1): fluid level is below the minimum prescribed level or, if no indicator, more than 12.5 mm below the edge of the filler opening
- ✓ If a reservoir has two caps, both compartments must be checked
- ✓ In a combination of vehicles, the reservoir of each vehicle with hydraulic brakes must be checked

10.2 Power Brake Booster Working Order

Check the working order of the power brake. The power brake cannot be checked using these methods if it is hydraulically assisted. For a vacuum brake booster: run engine a few seconds, stop it, pump the brake pedal several times, apply average pressure, restart engine while maintaining pressure, and check the movement of the brake pedal. For a hydraulic brake booster (electric pump): turn off engine, apply average pressure to the pedal, and listen for the electric pump working. Many school buses and some straight-body trucks use electric pump boosters.

- ✓ Vacuum booster defect (18.C): the brake pedal does not go down slightly after restarting the engine
- ✓ Hydraulic booster defect (18.C): the electric pump does not work when the engine is not running
- ✓ The power brake cannot be checked with these methods if hydraulically assisted

10.3 Braking Equipment Pressure and Leak Check

Check pressure and for leaks in the braking equipment. With the engine running, press down hard (harder than a normal braking manoeuvre) on the brake pedal for at least 10 seconds and check the movement of the pedal. For some vehicles with a hydraulic brake booster, this check cannot be performed if the engine is not running.

- ✓ Major defect (18.B): the brake pedal reaches the floor in less than 10 seconds
- ✓ Minor defect (18.2): the brake pedal reaches the floor in 10 seconds or more
- ✓ Major defect (18.B): the brake pedal has to be pumped several times to pressurize the circuit, felt by resistance in the pedal

10.4 Service Brake Effectiveness Check

Check the effectiveness of the service brake from the driver's compartment. Start the vehicle and drive forward slightly, press on the brake pedal, and check whether the vehicle stops quickly.

- ✓ Major defect (18.D): there is a significant reduction in braking capacity
- ✓ Test at low speed by driving forward slightly and pressing the brake pedal

10.5 Parking Brake Effectiveness (Hydraulic)

Check the effectiveness of the parking brake from the driver's compartment with the engine running. Apply the parking brake and try to drive forward (automatic: 'DRIVE' position; manual: right gear to move forward) and check whether it holds the vehicle stationary. Then release it and slowly drive a few metres forward watching wheel rotation in the mirrors. The parking brake cannot be checked on certain heavy vehicles with automatic transmission that cannot shift into gear while the parking brake is engaged.

- ✓ Defect (18.5): parking brake does not keep the vehicle from moving when driver tries to drive forward
- ✓ Defect (18.5): parking brake does not let the wheels turn freely when released
- ✓ Turning left and right helps check trailer/semi-trailer wheels in a combination

10.6 Power Brake (Booster) Working Order

Check the working order of the power brake. The power brake cannot be checked using these methods if it is hydraulically assisted. For a vacuum brake booster: let engine run a few seconds, stop engine, pump brake pedal several times, apply average pressure, restart engine while maintaining pressure, and check pedal movement. For a hydraulic brake booster (electric pump): turn off engine, apply average pressure to pedal, and listen for the electric pump working. Some straight-body trucks and most school buses have a hydraulic brake booster (electric pump).

- ✓ Vacuum booster defect 18.C (major): the brake pedal does not go down slightly after restarting the engine
- ✓ Hydraulic booster (electric pump) defect 18.C (major): the electric pump does not work when the engine is not running
- ✓ The power brake cannot be checked with these methods if it is hydraulically assisted

10.7 Parking Brake Effectiveness Check

Check the effectiveness of the parking brake with the engine running. Apply the parking brake and try to drive forward (automatic: shift to DRIVE; manual: select right forward gear) to confirm the brake keeps the vehicle stationary. Then release the brake and slowly drive a few metres, watching wheel rotation in the mirrors. The parking brake cannot be checked on certain vehicles with automatic transmission because the transmission cannot be shifted into gear while the parking brake is engaged.

- ✓ Defect 18.5 (minor): parking brake does not keep the vehicle from moving when the driver tries to drive forward
- ✓ Defect 18.5 (minor): parking brake does not let the wheels turn freely when released
- ✓ Turning left and right makes it easier to check trailer/semi-trailer wheels in a combination

10.8 Service Brake Warning Light Check

Check the working order of the service brake warning light from the driver's compartment. Release the parking brake (only if the service brake warning light is also the parking brake warning light), turn the ignition key to 'ON' or 'START', check whether the warning light switches on, start the engine, and check whether the warning light switches off.

- ✓ Defect (18.3): warning light does not switch on when the ignition key is in the 'ON' or 'START' position
- ✓ Defect (18.3): warning light stays on when the engine is running
- ✓ Release the parking brake first only if it shares the warning light with the parking brake

10.9 Parking Brake Warning Light Check

Check the working order of the parking brake warning light. Turn the ignition key to 'ON' or 'START', apply the parking brake, and check whether the warning light switches on. Then release the parking brake and check whether the warning light switches off.

- ✓ Defect (18.4): warning light does not switch on when the parking brake is activated
- ✓ Defect (18.4): warning light does not switch off when the parking brake is released

CHAPTER 11

Chapter 12 – Circle Check of a Vehicle: School Buses and Motor Coaches

11.1 Additional Circle Check Points for School Buses

When performing a circle check on a school bus, use the straight-body truck method plus the additional city bus points, and inspect components specific to school buses. These include power steering belts, driver-area windows, retractable stop signs, flashing lights, and hydraulic brake systems where equipped.

- ✓ Inspect the power steering belt (often present, item 5.3) and windows on both sides of and directly behind the driver's compartment (item 11.4)
- ✓ Check the retractable stop sign and its flashing/alternately flashing lights (20.7), the flashing red lights and alternately flashing yellow lights (20.8), and the hydraulic brake system where equipped (section 18)

11.2 Circle Check of a Motor Coach

A motor coach circle check is a sight and sound check of accessible parts, following the same steps as a city bus. Due to the vehicle configuration, the suspension system may be inaccessible, and the chassis frame and body are typically monocoque and specific to this vehicle type.

- ✓ Follow the same circle check steps as a city bus, checking accessible parts by sight and sound
- ✓ Recognize that the suspension may be inaccessible and body components are generally monocoque type specific to motor coaches

CHAPTER 12

Shifting Gears Efficiently (Chapter 3 – Know Your Vehicle)

12.1 Correct RPM for Each Gear

For efficient gear shifting, the engine must reach specific RPM ranges before changing gears. The example vehicle uses defined RPM targets for the first four gears based on an idling speed of about 650 RPM and a manoeuvre requirement of 300 RPM above idle.

- ✓ 650 RPM for 1st gear
- ✓ 950 RPM for 2nd gear
- ✓ 1,250 RPM for 3rd gear
- ✓ 1,550 RPM for 4th gear

12.2 Understanding the 300 RPM Manoeuvre Difference

To upshift, engine speed must be about 300 RPM higher than idling speed. Shifting becomes difficult when the difference between current RPM and the RPM needed for the manoeuvre falls below the idling RPM (e.g., 800 RPM – 300 RPM = 500 RPM).

- ✓ The manoeuvre requires roughly 300 RPM above idle speed
- ✓ Ideal moment to shift into 2nd is when engine reaches 950 RPM
- ✓ Difference lower than idling RPM makes shifting difficult

CHAPTER 13

Chapter 10 - Driving a Longer Combination Vehicle (LCV): Equipment Requirements

13.1 LONG Warning Sign Signage

A warning sign bearing the word 'LONG' must be displayed on the rear of the second semi-trailer, meeting size and cleanliness requirements per the Special Road Train Operating Permits Regulation.

- ✓ Sign must bear the word 'LONG' on the rear of the second semi-trailer
- ✓ Sign must measure 230 to 245 cm by 30 cm
- ✓ Sign must be rigid and free of any object, substance or dirt
- ✓ Sign not required for an LCV made up of a tractor, semi-trailer and tandem axle dolly with no semi-trailer hitched

13.2 Load Placement Between Semi-Trailers

The heavier semi-trailer must be positioned directly behind the tractor for stability, unless the weight difference is minimal.

- ✓ The semi-trailer with the greatest total loaded mass must always be hitched to the tractor
- ✓ Exception applies where the weight difference between the two semi-trailers is less than 10%

13.3 Length of Second Semi-Trailer

For all types of double trains, the second semi-trailer must fall within specified length limits. This ensures proper handling and legal compliance for LCVs.

- ✓ Maximum length of the second semi-trailer is 16.2 m
- ✓ Minimum length of the second semi-trailer is 12 m
- ✓ These limits apply to all types of double trains

13.4 Driver Monitoring System Requirement

An LCV must be equipped with a device that tracks the driver's behaviour. This device supports safety monitoring and enforcement compliance.

- ✓ LCV must have a device to track driver behaviour
- ✓ Device must record wide variations in speed
- ✓ Device must record data on date, time and speed

13.5 Travel in a Straight Line Tolerance

When an LCV travels in a straight line, neither semi-trailer may deviate laterally beyond a set limit, ensuring proper tracking.

- ✓ Neither semi-trailer may swing more than 80 mm out of line with the tractor to either side
- ✓ This applies when the LCV is travelling in a straight line

13.6 Dolly Requirements for LCVs

If an LCV includes a dolly, it must have a pilot relay valve to boost the braking signal of the second semi-trailer. C double train dollies have additional federal requirements.

- ✓ Dolly must be equipped with a pilot relay valve to boost braking signal of second semi-trailer
- ✓ For a C double train, dolly must meet section 903 of the Motor Vehicle Safety Regulation under the Motor Vehicle Safety Act

13.7 Tractor Axle Configuration for LCVs

The tractor of an LCV must have specific axle and spacing dimensions to ensure stability and legal operation.

- ✓ Tractor must have a front single axle and a rear tandem axle
- ✓ Interaxle spacing must be at least 3.5 m (single axle rotation axis to first tandem axle rotation axis)
- ✓ Wheelbase must be 6.2 m or less (single axle rotation axis to centre of tandem axle)

13.8 Semi-Trailer Axle Requirements

First and second semi-trailers of LCVs have specific required axle configurations depending on train type (A, B, or C).

- ✓ First semi-trailer of a B train must have a tandem or triple axle
- ✓ First semi-trailer of an A or C train must have a tandem axle, triple axle or four-axle group with 32,000 kg load limit (class B.44 or B.45)
- ✓ Second semi-trailer for all LCV types must have a tandem or triple axle
- ✓ Interaxle spacing of tandem/triple axle must not exceed 1.85 m
- ✓ First semi-trailer of A or C train made before March 1, 1997 may have any combination of tandem or triple axles with interaxle spacing rules not applying

CHAPTER 14

Chapter 12 – Circle Check of a Vehicle: School Buses

14.1 Additional Circle Check Points for School Buses

For a school bus, use the circle check method for a straight-body truck and add the city bus points plus specific school bus components. These include the power steering belt, driver-area windows, the retractable stop sign with flashing lights, red flashing lights, alternately flashing yellow lights, and the hydraulic brake system where equipped.

- ✓ Check the power steering belt (often present, depending on equipment) (5.3)
- ✓ Check the windows on both sides of and directly behind the driver's compartment (11.4)
- ✓ Check the retractable stop sign and its flashing and alternately flashing lights (20.7)
- ✓ Check the flashing red lights and alternately flashing yellow lights (20.8)
- ✓ Check the hydraulic brake system where equipped (section 18)

CHAPTER 15

Introduction and How to Use This Guide

15.1 Purpose of the Heavy Vehicle Guide

This guide summarizes the standards and rules of conduct that apply to driving a heavy vehicle in Québec. It presents the principal obligations of heavy vehicle drivers, driving techniques and safety standards. For legal reference, drivers should consult the Highway Safety Code and its regulations.

- ✓ Sharing the road requires courtesy and mutual respect from all road users
- ✓ Professional drivers must know their rights and obligations and adopt safe, cooperative behaviour
- ✓ Consult the Highway Safety Code and attendant regulations for legal reference

15.2 Guide Symbols and Their Meanings

The guide uses icons to help candidates: IMPORTANT (important safety information), THINK ABOUT IT (things needed to become competent), TOOLBOX (additional information), and THEORETICAL EXERCISES (self-checks of learning).

- ✓ The IMPORTANT icon flags critical safety information
- ✓ The THEORETICAL EXERCISES icon marks self-evaluation exercises

CHAPTER 16

Rules

16.1 Circle Check and Hours of Driving Regulations

Under the Highway Safety Code, drivers must ensure the vehicle undergoes an inspection each day and at predetermined intervals (circle check). The Regulation respecting hours of driving and rest of heavy vehicle drivers aims to cut down accident risk and also affects operators who must ensure drivers can drive safely.

- ✓ A daily circle check inspection is required under the Highway Safety Code
- ✓ Hours of driving and rest regulations apply to both drivers and operators

16.2 Vehicle Load and Size Limits Regulation

This regulation sets standards limiting size, load per axle group and total loaded mass on public roads. Vehicles not meeting standards are considered outsized or overloaded and cannot use public roads without a special permit.

- ✓ Vehicles exceeding size/load limits are outsized or overloaded
- ✓ Outsized/overloaded vehicles require a special permit to use public roads

16.3 Training Requirements for Special Cargo and Passengers

Drivers transporting dangerous substances must be trained and carry an employer's certificate proving training. School bus drivers must receive training on school children safety and hold a certificate of competency.

- ✓ Dangerous substance drivers need training and an employer's certificate
- ✓ School bus drivers need training and a certificate of competency

16.4 Driving Outside Québec

When driving outside Québec, be familiar with laws and regulations in other states/provinces. Heavy vehicle drivers in the United States must be at least age 21. Driving hour requirements and defect classifications may differ in some jurisdictions.

- ✓ US heavy vehicle drivers must be at least age 21
- ✓ Driving hours and defect classifications may differ between jurisdictions

CHAPTER 17

Driver Fatigue

17.1 Fatigue as a Leading Accident Cause

Driver fatigue is one of the leading causes of traffic accidents, along with speeding, distraction and alcohol. A U.S. study shows fatigue is a primary cause of fatal accidents for heavy vehicle drivers, and health problems related to insufficient or poor-quality sleep contribute to many fatalities.

- ✓ Fatigue is one of the leading causes of traffic accidents alongside speeding, distraction and alcohol
- ✓ Fatigue is a primary cause of fatal accidents among heavy vehicle drivers
- ✓ Regulating driving/off-duty hours alone is not enough to eliminate fatigue-related accident risk

17.2 Effects of Fatigue on Driving

Fatigue becomes a problem when it compromises your ability to perform tasks requiring attention, judgment and sharp reflexes. It can lead to drowsiness, microsleep periods and falling asleep at the wheel.

- ✓ Fatigue reduces alertness, concentration and attention
- ✓ Fatigue alters judgment and decision-making, slows reaction time and impairs memory
- ✓ Fatigue can lead to drowsiness, microsleep periods and falling asleep at the wheel

17.3 Recognizing Warning Signs of Fatigue

The warning signs of fatigue vary from person to person but should always be taken seriously. When the first signs appear, you should stop immediately in a safe location to rest.

- ✓ Warning signs include frequent yawning, excessive blinking, nodding off and straying into the adjacent lane
- ✓ Other signs include being slow to brake, difficulty keeping constant speed, not remembering the last few kilometres, and missing an exit
- ✓ When the first signs of fatigue appear, stop immediately in a safe location to rest

17.4 Time of Day and Fatigue Risk

The body follows a daily biological cycle with 'down' periods where metabolism slows, alertness declines and fatigue sets in. Certain periods carry the highest risk of falling asleep at the wheel.

- ✓ The risk of falling asleep is greatest early in the afternoon between 1:00 p.m. and 3:00 p.m.
- ✓ The risk is also greatest at night between midnight and 6:00 a.m.
- ✓ Whenever possible, avoid driving during these high-risk periods

17.5 Number of Hours Without Sleep

Physical and mental performance declines rapidly after prolonged periods without sleep, becoming comparable to alcohol impairment.

- ✓ After 17 hours without sleep, physical and mental performance declines rapidly
- ✓ After 17 to 19 hours without sleep, your capacities equal a blood alcohol concentration of 0.05
- ✓ After 24 hours without sleep, your capacities equal a blood alcohol concentration of 0.10

17.6 Recommendations for Managing Fatigue on the Road

On the road, plan for rest and adjust driving to avoid fatigue. Fatigue is not something you can fight against.

- ✓ Begin the work day well rested and take a break every two hours with naps when necessary
- ✓ Avoid driving at high-risk times (midnight–6 a.m. and 1–3 p.m.) and slow down to reduce information overload
- ✓ Assess your degree of fatigue and pull over to a safe location at the first signs to rest

17.7 Recognizing the Signs of Fatigue

The warning signs of fatigue should be taken seriously. You must stop immediately in a safe location to rest when the first signs appear. Signs vary by individual but must be learned and recognized.

- ✓ Stop immediately in a safe location to rest when the first signs of fatigue appear
- ✓ Signs include frequent yawning, excessive blinking, nodding off, and straying into the adjacent lane
- ✓ Signs include being slow to brake, difficulty keeping constant speed, missing an exit, and not remembering the last few kilometres travelled
- ✓ Signs include feeling irritable, hallucinations, and failing to check rearview mirrors

17.8 Time of Day and Biological Clock

The risk of falling asleep at the wheel is greatest early in the afternoon between 1:00 p.m. and 3:00 p.m. and at night between midnight and 6:00 a.m. The body follows a daily cycle with 'down' periods where metabolism slows and alertness declines.

- ✓ Highest fatigue accident risk occurs at night between midnight and 6:00 a.m.
- ✓ Elevated fatigue risk also occurs in the afternoon between 1:00 p.m. and 3:00 p.m.
- ✓ During 'down' periods metabolism slows, alertness declines and fatigue sets in

17.9 Recommendations for Managing Fatigue

Fatigue must be managed both at home and on the road. At home: prioritize sleep, plan rest time, exercise, eat well, watch caffeine/alcohol, manage stress. On the road: begin well rested, plan routes with rest stops, avoid high-risk hours, slow down, avoid visual fatigue. Fatigue cannot be fought—respect your limits.

- ✓ At home, make sleep a priority, exercise regularly and watch caffeine and alcohol consumption
- ✓ On the road, begin the work day well rested and take a break every two hours with naps as needed
- ✓ Avoid driving at night between midnight and 6:00 a.m. and during the day between 1:00 p.m. and 3:00 p.m.
- ✓ Fatigue cannot be fought; pull over to a safe location as soon as the first signs appear

17.10 Three Factors Determining Fatigue

Three main factors determine an individual's fatigue: the driver, the work environment and the physical environment.

- ✓ The driver factor includes health, sleep disorders, sleep quality, age, emotional state, diet and fitness
- ✓ The work environment factor includes schedule changes, long hauls, night work, waiting times and length of work day
- ✓ The physical environment factor includes weather, road conditions, rest area availability, noise, lighting, cab temperature and ergonomics

17.11 Accumulated Sleep Debt

If you do not get enough sleep, you build up a 'sleep debt.' Performance may suffer after even a single night of insufficient sleep. The only remedy is adequate sleep.

- ✓ Most adults need 7 to 9 hours of sleep each night to feel rested and alert
- ✓ Performance may begin to suffer after even a single night without enough sleep
- ✓ The only way to remedy a sleep debt is to get enough sleep; the body cannot compensate long-term

17.12 Sleep Apnea and Sleep Disorders

Obstructive sleep apnea affects at least 10% of the population and is characterized by throat obstruction that recurs during the night, reducing blood oxygen and disrupting sleep. Many sufferers are unaware of their condition.

- ✓ Symptoms include snoring, agitated sleep and frequently waking due to a feeling of suffocation
- ✓ Daytime symptoms include sleepiness, low energy, morning headaches and memory/attention problems
- ✓ Conditions like type II diabetes, hypertension, depression and cardiovascular disease can lead to sleep apnea; see your doctor to treat it

17.13 Alcohol, Medication and Fatigue

Consumption of alcohol, medications or drugs greatly amplifies the effects of fatigue and the accumulation of a sleep debt.

- ✓ Alcohol, medications or drugs greatly amplify the effects of fatigue
- ✓ These substances worsen the accumulation of a sleep debt

17.14 Recommendations for Managing Fatigue at Home

Managing fatigue starts at home by prioritizing sleep, exercise, diet and stress management.

- ✓ Make sleep a priority, plan free time for restorative sleep and ask family not to disturb you
- ✓ Exercise regularly (even 15 minutes/day), watch diet, caffeine and alcohol consumption
- ✓ See your doctor if you need help with sleep disorders

17.15 Sleep Disorders and Sleep Apnea

There are dozens of sleep disorders that can make a person abnormally tired. Obstructive sleep apnea affects at least 10% of the population and is often undiagnosed. It involves repeated throat obstruction reducing blood oxygen and disrupting sleep, preventing deep restorative sleep.

- ✓ Obstructive sleep apnea affects at least 10% of the population and often goes undiagnosed
- ✓ Symptoms of sleep apnea include snoring, agitated sleep, waking with feelings of suffocation, daytime sleepiness and morning headaches
- ✓ Illnesses such as type II diabetes, hypertension, depression and cardiovascular disease can lead to sleep apnea
- ✓ See your doctor to treat sleep disorders

17.16 Alcohol/Drugs Amplify Fatigue and Noise Effects

Consumption of alcohol, medications or drugs greatly amplifies the effects of fatigue and sleep debt. Noise from the engine, tires, exhaust, radio or the cab itself magnifies driver fatigue, worsened by poor soundproofing, high speed and loud radio.

- ✓ Alcohol, medications or drugs greatly amplify the effects of fatigue and sleep debt
- ✓ Noise from the engine, tires, exhaust, radio or cab contributes to driver fatigue
- ✓ Inadequate soundproofing, high vehicle speed and loud radio all increase noise-related fatigue

17.17 Noise as a Fatigue Factor

Noise magnifies fatigue and varies with the environment and vehicle type. Sources include the engine, tires, exhaust, radio and cab.

- ✓ Inadequate cab soundproofing, high speed and loud radio all add to noise level and driver fatigue
- ✓ Reducing noise sources helps reduce fatigue

CHAPTER 18

Downshifting (Chapter 3: Know Your Vehicle)

18.1 Double-Declutching Requirement

Downshifting requires the double-declutching technique to prevent friction between components of the non-synchromesh manual transmission and to protect the mechanism from premature wear. Unlike upshifting, engine speed must be increased before downshifting.

- ✓ Must use double-declutching to downshift
- ✓ Prevents wear on non-synchromesh transmission
- ✓ Requires shifting into neutral
- ✓ Engine speed must be increased before downshifting

18.2 Downshifting Technique

To downshift, slow the vehicle with the service brake to reduce and stabilize engine RPM, then follow a precise sequence. Engine speed must be reduced to no faster than its maximum RPM when in neutral. Example: downshifting from 5th to 4th gear.

- ✓ Slow vehicle until gauge reads 1,200 RPM, push clutch to friction point (position 2)
- ✓ Keep engine speed same, push clutch to lower free play (position 3) releasing accelerator
- ✓ Shift into neutral (N)
- ✓ Release clutch to upper free play (position 1)
- ✓ Push accelerator to increase engine speed by 300 RPM to reach 1,500 RPM
- ✓ Release accelerator, push clutch to position 3, shift into 4th gear
- ✓ Release clutch to complete manoeuvre
- ✓ Practise double-clutching on flat terrain

CHAPTER 19

Allow Yourself Enough Space

19.1 Counting seconds for following distance

Use the counting method to set following distance: allow one second for every three metres of vehicle length on dry pavement. A 12 m heavy vehicle needs 4 seconds; an 18 m tractor-trailer needs 6 seconds. This method works at all speeds.

- ✓ Allow one second for every 3 metres of vehicle length on dry pavement
- ✓ 12 m vehicle = 4 seconds; 18 m tractor-trailer = 6 seconds
- ✓ Choose a fixed reference point and count 'one thousand and one...' when the rear of the vehicle ahead passes it

19.2 Adjusting following distance for conditions

Increase following distance for speeds over 60 km/h or driving at night. Multiply the distance for poor road conditions.

- ✓ Increase distance at speeds over 60 km/h and at night
- ✓ Double the distance on wet pavement
- ✓ Triple it in snow and quadruple it on icy pavement

19.3 Space overhead

Be aware of your vehicle's height (including load) to avoid striking bridges or overpasses. Do not assume posted heights are correct — repaving, ice or packed snow can reduce clearance. An empty trailer rides higher than a loaded one.

- ✓ Do not assume posted bridge/overpass heights are correct; stop and check if unsure
- ✓ Repaved roads, ice or packed snow reduce clearance
- ✓ An empty trailer rides higher than a loaded one
- ✓ Watch for tilting roads and overhead objects when clearing signs, trees or when backing up

19.4 Following Distance - Counting Seconds

To follow at a safe distance, allow one second for every three metres of vehicle length on dry pavement. A 12 m vehicle needs 4 seconds; an 18 m tractor-trailer needs 6 seconds. Choose a stationary reference point and count 'one thousand and one' as the vehicle ahead passes it.

- ✓ Allow one second for every three metres of vehicle length on dry pavement
- ✓ A 12 m heavy vehicle needs 4 seconds following distance
- ✓ An 18 m tractor-trailer needs 6 seconds following distance
- ✓ If you pass the reference point before finishing the count, you are following too closely

19.5 Adjusting Following Distance for Conditions

The base following distance must be increased for higher speeds, night driving and poor conditions. Speed over 60 km/h or night driving requires more distance; double on wet pavement, triple in snow and quadruple on ice.

- ✓ Increase distance at speeds over 60 km/h or when driving at night
- ✓ Double the distance on wet pavement
- ✓ Triple the distance when driving in snow
- ✓ Quadruple the distance on icy pavement

19.6 Space Overhead

Be aware of your vehicle and load height to avoid striking bridges and overpasses. Do not assume posted clearances are correct—repaving, ice or packed snow reduces clearance. Load weight affects height, as an empty trailer rides higher than a loaded one.

- ✓ Do not assume posted bridge/overpass heights are correct
- ✓ Stop and check if unsure you have enough overhead clearance
- ✓ Remember an empty trailer rides higher than a loaded one
- ✓ Check overhead for wires, branches and objects before backing up

19.7 Space ahead when stopped and driving

When stopping behind another vehicle, leave enough space to pull out around it without backing up. When driving, always allow enough space in front so you can brake or stop easily if an unexpected hazard arises.

- ✓ Leave enough space to pull around the vehicle ahead without backing up
- ✓ Always keep enough space in front to brake or stop for hazards

19.8 Interpreting the count result

If you reach the reference point after counting the full number of seconds, you are following at the correct distance under normal conditions. If you reach it before finishing the count, you are following too closely.

- ✓ Reaching the point after the full count = safe distance
- ✓ Reaching the point before finishing the count = too close, increase distance

19.9 Space behind and tailgating

Most heavy vehicles make it nearly impossible to see vehicles following close behind. When forced to drive slowly, motorists tend to follow closely. Since you cannot prevent tailgating, make allowance for their presence.

- ✓ Be ready at all times to respond to changing situations
- ✓ Avoid abrupt manoeuvres when changing lanes or turning
- ✓ Signal ahead of time and before braking
- ✓ Increase distance from the vehicle ahead so a passing vehicle can pull back in
- ✓ Do not use brake lights to warn a tailgater

19.10 Space to the sides

A heavy vehicle occupies almost the full lane width. Stay centred in your lane and avoid straying into other lanes by looking well ahead to the centre of your lane. Drive defensively and make sure other drivers can see you.

- ✓ Keep your vehicle centred in the lane
- ✓ Look well ahead to the centre of your lane to maintain position
- ✓ Drive defensively and ensure other drivers can see you

19.11 Crosswinds and reduced visibility

Strong winds or blowing snow can make it hard to stay in your lane. How your vehicle reacts to crosswinds varies with load, road surface, and situations like emerging from a tunnel or passing under an overpass. Slow down in high winds and watch for warning signs.

- ✓ Slow down in high winds
- ✓ Be alert to crosswinds when emerging from tunnels or under overpasses
- ✓ Watch for signs indicating high winds or blowing snow (VISIBILITÉ RÉDUITE)

19.12 Raised dump body warning system

Since 2019, all dump trucks and road tractors carrying dump trailers or semi dump trailers must be equipped with a warning system that is automatically activated until the dump body is completely lowered. Fines apply if this safety feature is missing.

- ✓ Dump trucks and dump-trailer tractors must have a raised-body warning system since 2019
- ✓ The warning stays active until the dump body is fully lowered; fines apply for non-compliance

19.13 Space Ahead When Stopped and Driving

When stopping behind another vehicle, leave enough space to pull around it without backing up. When driving, always allow enough space in front so you can brake or stop easily if an unexpected hazard arises.

- ✓ Leave enough space when stopped to pull around the vehicle ahead without backing up
- ✓ Always allow enough space in front to brake or stop for hazards

19.14 Space Behind and Tailgaters

Most heavy vehicles make it nearly impossible to see vehicles following closely, and motorists tend to follow closely when you drive slowly. Since you cannot prevent tailgating, make allowance for it by staying alert, avoiding abrupt manoeuvres, and increasing your front space.

- ✓ Avoid abrupt manoeuvres when changing lanes or turning if being tailgated
- ✓ Signal intentions ahead of time and before braking
- ✓ Increase distance to the vehicle ahead to leave room for passers to merge
- ✓ Do not use your brake lights to warn a tailgater against following too closely

19.15 Space to the Sides

A heavy vehicle occupies almost the full lane width. Maintain your vehicle in the centre of the lane and avoid straying. Look well ahead to the centre of your lane to help hold position. Strong winds or blowing snow can push you out of your lane, especially when emerging from tunnels or under overpasses.

- ✓ Keep the vehicle centred in the lane and avoid straying into other lanes
- ✓ Look to the centre of your lane far ahead to maintain lane position
- ✓ Slow down in high winds and watch for high wind/blowing snow warning signs
- ✓ Crosswind effect varies with load and is worse on snowy or icy roads

19.16 Raised Dump Body Warning System

Since 2019, all dump trucks and road tractors carrying dump trailers or semi dump trailers must be equipped with a warning system that activates automatically until the dump body is fully lowered. Fines apply if the vehicle lacks this safety feature.

- ✓ Dump trucks and dump trailer combinations must have a raised dump body warning system (since 2019)
- ✓ The warning system stays active until the dump body is completely lowered
- ✓ Fines apply for vehicles not equipped with this feature

CHAPTER 20

What Is Hydroplaning and How Should You React?

20.1 Understanding Hydroplaning

Hydroplaning occurs when tires lose traction, especially when puddles form during rain. A thin layer of water forms between the tire and road, causing tires to lose grip. It is worse with underinflated tires or worn tread.

- ✓ Hydroplaning happens when a water layer forms between tire and road, causing loss of grip
- ✓ Underinflated tires and worn tread make hydroplaning worse

20.2 Reacting to Hydroplaning

To maintain control during hydroplaning, take your foot off the accelerator and avoid braking, which could cause loss of control. Once control is regained, resume normal speed.

- ✓ Take your foot off the accelerator
- ✓ Avoid braking, as it could cause loss of control
- ✓ Resume normal speed only after regaining control

CHAPTER 21

Hitching and Unhitching a Double Road Train

21.1 Equipment Used to Hitch a Second Semi-Trailer

A second semi-trailer can be hitched using different equipment depending on train type: an A converter dolly with one pintle eye (A train); a sliding or stationary fifth wheel (B train); or a tandem-axle B converter dolly with 2 pintle eyes (C train).

- ✓ An A train uses an A converter dolly with one pintle eye
- ✓ A B train uses a sliding fifth wheel below the first semi-trailer or a stationary fifth wheel at the rear
- ✓ A C train uses a tandem-axle B converter dolly with 2 pintle eyes

21.2 Hitching a B Train

First hitch the first semi-trailer to the tractor. Then position the combination in front of the second semi-trailer, back up until the kingpin is inside the fifth wheel, test the lock, inspect the coupling, connect lights and hoses, open the first semi-trailer's brake line shut-off valves, and raise the landing gear.

- ✓ Hitch the first semi-trailer to the tractor before positioning for the second
- ✓ Back up until the kingpin is inside the fifth wheel and test by moving forward until resistance
- ✓ Open the brake line shut-off valves of the first semi-trailer
- ✓ Check the kingpin is fully inserted and the locking mechanism is in the lock position

21.3 Hitching an A or C Train with a Dolly

Hitch the first semi-trailer, then back up to line the dolly's pintle eye with the first semi-trailer's pintle hook. Hitch the dolly, lower the drawbar and put the safety catch in place, connect brake hoses, indicator lights and safety chains, open shut-off valves, and check the dolly's general condition before hitching the second semi-trailer.

- ✓ Line up the dolly's pintle eye straight with the first semi-trailer's pintle hook
- ✓ Lower the dolly's drawbar and put the safety catch in place after hitching
- ✓ Connect the dolly's brake hoses, indicator lights and install the safety chains
- ✓ Open the brake line shut-off valves from the first semi-trailer to the dolly

21.4 Hitching the Dolly to the Second Semi-Trailer

Ensure the second semi-trailer's upper coupler is slightly lower than the dolly's fifth wheel plate at its pivot point so it raises slightly on hitching. Back up slowly until the kingpin is inside the fifth wheel, test the lock by moving forward until resistance, then inspect visually and connect brake hoses and indicator lights.

- ✓ The second semi-trailer's upper coupler should be slightly lower than the dolly's fifth wheel plate
- ✓ Back up until the kingpin is positioned inside the fifth wheel
- ✓ Test the locking mechanism by moving the combination forward until you feel resistance
- ✓ Visually inspect the locking mechanism using a flashlight if necessary

21.5 Unhitching a Double Road Train

To unhitch an A, B or C train, follow the single semi-trailer procedure. For a B train, place additional landing gear under the second semi-trailer to prevent it falling over. For A or C trains, park straight on firm level ground, close air shut-offs, unhitch the second semi-trailer, then unhook the dolly safely.

- ✓ Park the double road train in a straight line on a firm level surface with enough space
- ✓ For a B train, place additional landing gear under the second semi-trailer to prevent it falling over
- ✓ Close the air shut-offs from the dolly to the first semi-trailer before unhitching
- ✓ Never unlock the heel of the tow hook while the dolly is still under the second semi-trailer, as the drawbar could fly up

21.6 Final Circle Check After Hitching

Even though numerous checks are done throughout the hitching process, you must perform a circle check on the entire vehicle combination when everything is hitched and ready to go. This is the final check on the hitching system before heading out.

- ✓ Perform a circle check on the entire vehicle combination once hitched and ready to go
- ✓ The circle check is the final opportunity to verify the hitching system before driving

21.7 Equipment for Coupling a Second Semi-Trailer

A second semi-trailer is joined to the first using specific equipment depending on the train type (A, B or C).

- ✓ An A train uses an A converter dolly with one pintle eye
- ✓ A B train uses a sliding fifth wheel under the first semi-trailer or a stationary fifth wheel at its rear
- ✓ A C train uses a tandem-axle B converter dolly with two pintle eyes

21.8 Hitching an A or C Train Using a Dolly

For A/C trains, the dolly's pintle eye is aligned and hitched to the first semi-trailer's pintle hook, then the combination is backed under the second semi-trailer.

- ✓ Align the dolly's pintle eye straight with the first semi-trailer's pintle hook
- ✓ Center the pintle eye in the hook so the dolly can be hitched
- ✓ Lower the dolly's drawbar and put the safety catch in place
- ✓ Connect the dolly's brake hoses, indicator lights and install safety chains
- ✓ Open the brake line shut-off valves from the first semi-trailer to the dolly
- ✓ Back up until roughly 30 cm in front of the second semi-trailer before final hitch

21.9 Alternative Dolly-First Method for Short Trains

For double road trains 25 m or shorter, some drivers position the dolly first in front of the second semi-trailer before hitching the first trailer.

- ✓ Hook the dolly to the tractor by the drawbar and position it ~30 cm in front of the second trailer
- ✓ Do not hitch the dolly to the second trailer at this positioning stage
- ✓ Hitch the first semi-trailer, then hook the dolly to it, then back up to hitch the second trailer
- ✓ Do not forget to check the dolly, brake hoses, indicator lights and safety chains

21.10 Final Circle Check Before Departure

Despite checks made during hitching, a full circle check of the entire combination is required once assembled and ready to go.

- ✓ Perform a circle check on the entire vehicle combination when hitched and ready
- ✓ This is the final check on the hitching system before heading out on the road

21.11 Alternative Dolly-First Hitching Method

For double road trains 25 m or shorter, some drivers hitch the dolly to the tractor first to position it in front of the second semi-trailer. The dolly is positioned about 30 cm in front of the second semi-trailer, then the combination is backed up to hitch.

- ✓ This method is used for double road trains 25 m long or shorter
- ✓ Position the dolly approximately 30 cm in front of the second semi-trailer without hitching it yet
- ✓ Do not forget to check the dolly, brake hoses, indicator lights and safety chains

CHAPTER 22

19 - Pneumatic Brake System

22.1 Low Air Pressure Warning Device Check

Check the working order of the service brake low air pressure warning device(s), which may be visual (wigwag), light, or buzzer. Position the switch 'ON' and check the pressure gauge. If pressure is above 380 kPa (55 psi), release the parking brake and pump the brake pedal until the warning device activates. If below 380 kPa, start the engine to increase pressure and confirm warning devices work until pressure reaches at least 380 kPa (55 psi). Make sure air lines are working and open suspension lines if equipped with air springs.

- ✓ Major defect (19.A): none of the low pressure warning devices work when air pressure is below 380 kPa (55 psi)
- ✓ Minor defect (19.1): low pressure warning buzzer does not work when pressure is below 380 kPa (55 psi) - only for vehicles with more than one warning device
- ✓ Minor defect (19.2): visual and light warning devices do not work when pressure is below 380 kPa (55 psi)
- ✓ Prefer to release the parking brake unless the vehicle lacks an anti-compounding brake device to avoid damaging brake chambers

22.2 Compressor Performance Check

Check whether the compressor's performance allows the service brake to work properly. Always release the parking brake so all air brake circuits are engaged. Release the parking brake, and with the engine idling confirm the compressor is working by watching the needle/gauge rise. Press the brake pedal and watch the gauges to check whether the compressor can reach and maintain the prescribed pressure threshold.

- ✓ Major defect (19.B): the air compressor cannot reach or maintain air pressure of at least 620 kPa (90 psi)
- ✓ Always release the parking brake to engage all air brake circuits during this check

22.3 Pressure Regulator - Compressor Cut-Out

Check the pressure at which the compressor stops (cut-out). While watching the pressure gauges, run the engine at about 1,000 rpm until the air pressure stops rising, then take an air pressure reading. A reading at 1,000 rpm gives an accurate result while limiting fuel consumption.

- ✓ Defect (19.3): the compressor does not switch off when air pressure is between 805 kPa (117 psi) and 945 kPa (137 psi)
- ✓ Run engine at about 1,000 rpm to obtain an accurate cut-out reading

22.4 Pressure Regulator - Compressor Cut-In

Check the pressure at which the compressor starts (cut-in). Release the parking brake, and with the engine running watch the gauges until pressure stops increasing. Pump the brake pedal until the compressor starts, then take a pressure gauge reading.

- ✓ Defect (19.3): the compressor starts when the pressure is less than or equal to 550 kPa (80 psi)
- ✓ Pump the brake pedal until the compressor cuts back in and record the reading

22.5 Air Brake System Leak Test

Check for air leaks. Listen for leaks at all times. Release the parking brake, run the engine until air pressure reaches maximum, turn off the engine, press the brake pedal all the way down, and watch the pressure gauge. If there is a continuous drop, hold the pedal fully depressed for at least 1 minute and evaluate whether the defect is major or minor. Leak severity limits differ by number of units in the combination.

- ✓ Single-unit vehicle: minor defect (19.4) if loss exceeds 20 kPa (3 psi)/min; major defect (19.C) if exceeds 40 kPa (6 psi)/min
- ✓ Two-unit vehicle: minor defect (19.4) if loss exceeds 28 kPa (4 psi)/min; major defect (19.C) if exceeds 48 kPa (7 psi)/min
- ✓ Three-unit vehicle: minor defect (19.4) if loss exceeds 35 kPa (5 psi)/min; major defect (19.C) if exceeds 62 kPa (9 psi)/min
- ✓ Hold brake pedal fully depressed for at least 1 minute to measure air loss

22.6 Service Brake Effectiveness (Pneumatic)

Check the effectiveness of the service brake from the driver's compartment. Start the vehicle and drive forward slightly, press on the brake pedal, and check whether the vehicle stops quickly.

- ✓ Major defect (19.D): there is a significant reduction in braking capacity
- ✓ Test at low speed by driving forward slightly and applying the brake

22.7 Parking Brake Effectiveness (Pneumatic)

Check the effectiveness of the parking brake from the driver's compartment with the engine running. For a combination, the parking brake of each vehicle must be checked. To apply: apply the parking brake, try to drive forward (automatic: 'DRIVE'; manual: right gear) and check that it holds stationary. To release: release the parking brake, make sure there is at least 483 kPa (70 psi) in the circuit to fully release the spring brakes and avoid skewing results, then slowly drive a few metres watching wheel rotation.

- ✓ Defect (19.5): parking brake does not prevent the vehicle from moving when driver tries to drive forward
- ✓ Defect (19.5): parking brake does not let the wheels turn freely when released
- ✓ Ensure at least 483 kPa (70 psi) in the circuit to completely release the spring brakes before testing release
- ✓ For a combination, the parking brake of each vehicle must be checked

22.8 Pressure Regulator - Compressor Cut-Out (Stops)

Check the pressure at which the compressor stops. While watching the pressure gauges, run the engine at about 1,000 rpm until the air pressure stops rising, then take a reading. A reading at 1,000 rpm gives an accurate performance reading while limiting fuel consumption.

- ✓ Defect 19.3 (minor): the compressor does not switch off when air pressure is between 805 kPa (117 psi) and 945 kPa (137 psi)
- ✓ Take the pressure reading at about 1,000 rpm once the pressure stops rising

22.9 Pressure Regulator - Compressor Cut-In (Starts)

Check the pressure at which the compressor starts. Release the parking brake, with the engine running watch the gauges, confirm pressure has stopped increasing, pump the brake pedal until the compressor starts, and take a reading.

- ✓ Defect 19.3 (minor): the compressor starts when the pressure is less than or equal to 550 kPa (80 psi)
- ✓ The compressor should cut in before pressure falls to 550 kPa (80 psi)

22.10 Braking Equipment Air Leak Check

Check for leaks in the braking equipment. Release the parking brake, run engine to build maximum pressure, turn off engine, press the brake pedal all the way down, and watch the pressure gauge. If there is a continuous drop, hold the pedal fully depressed for at least 1 minute and evaluate whether the defect is minor or major. Allowable air loss per minute varies by number of units.

- ✓ Single-unit vehicle: minor defect 19.4 if loss exceeds 20 kPa (3 psi); major defect 19.C if loss exceeds 40 kPa (6 psi)
- ✓ Two-unit vehicle: minor defect 19.4 if loss exceeds 28 kPa (4 psi); major defect 19.C if loss exceeds 48 kPa (7 psi)
- ✓ Three-unit vehicle: minor defect 19.4 if loss exceeds 35 kPa (5 psi); major defect 19.C if loss exceeds 62 kPa (9 psi)
- ✓ Hold the brake pedal fully depressed for at least 1 minute to measure leakage

22.11 Pneumatic Service Brake Effectiveness

Check the effectiveness of the service brake by starting the vehicle, driving forward slightly, pressing the brake pedal, and confirming the vehicle stops quickly.

- ✓ Defect 19.D (major): there is a significant reduction in the braking capacity
- ✓ Confirm quick stopping when the brake pedal is applied

22.12 Pneumatic Parking Brake Effectiveness

Check the effectiveness of the parking brake with the engine running. Apply the parking brake and try to drive forward (automatic: DRIVE; manual: right forward gear) to confirm it holds the vehicle. Then release the brake, ensure there is enough circuit pressure (483 kPa or 70 psi) to fully release the spring brakes and avoid skewing results, and drive forward slowly watching wheel rotation. For a combination of vehicles, the parking brake of each vehicle must be checked.

- ✓ Defect 19.5 (minor): parking brake does not prevent the vehicle from moving when the driver tries to drive forward
- ✓ Defect 19.5 (minor): parking brake does not let the wheels turn freely when released
- ✓ Ensure at least 483 kPa (70 psi) in the circuit to completely release the parking brake springs before checking release
- ✓ For a combination of vehicles, the parking brake of each vehicle must be checked

CHAPTER 23

Inspections While on the Road

23.1 Scheduled En-Route Inspection Intervals

Drivers should conduct a new inspection 80 kilometres after setting out, since all systems have generally been used by then. After that, inspect every 160 kilometres or every two hours, checking tires, brakes, lighting, coupling mechanism, and cargo securement.

- ✓ Perform a new inspection 80 km after setting out on a trip
- ✓ Afterward, inspect every 160 km or every two hours, ideally during rest stops at service areas
- ✓ Check critical systems: tires, brakes, lighting, coupling mechanism, and cargo securement

23.2 Ongoing Attentiveness to Vehicle Condition

Vehicle safety does not depend only on maintenance and the circle check; a component can deteriorate at any time. Drivers must watch for signs of breakdown or degraded cargo securement and stop safely to inspect when noticing unusual noises, reactions, or warning lights.

- ✓ Be attentive to any sign of eventual breakdown or degraded securement while driving
- ✓ Stop in a safe, appropriate location to inspect if you notice an unusual noise, reaction, or a warning light coming on

CHAPTER 24

Chapter 1 - The Driver's Responsibilities: Habits You Must Develop

24.1 Seat Belt Requirement

In Québec, heavy vehicle drivers must wear the seat belts installed by the vehicle manufacturer. Seat belts greatly reduce deaths and the seriousness of injuries by preventing drivers from hitting the steering wheel or windshield and from being thrown from the vehicle.

- ✓ Heavy vehicle drivers must wear manufacturer-installed seat belts
- ✓ Do not drive if the seat belt is missing, altered, or not in working order
- ✓ Seat belts prevent ejection and impact with steering wheel/windshield

24.2 Alcohol and Drug Impairment Limits

Drivers are prohibited from driving a heavy vehicle while impaired by alcohol or drugs. A blood alcohol level of 80 mg per 100 ml of blood (0.08) or more while impaired triggers penalties under the Criminal Code and the Highway Safety Code.

- ✓ Prohibited from driving a heavy vehicle when impaired by alcohol or drugs
- ✓ Blood alcohol of 0.08 or more while impaired is subject to Criminal Code and Highway Safety Code penalties
- ✓ Alcohol or drugs and driving don't mix

24.3 Zero Tolerance Rule for Buses, Minibuses and Taxis

If you have any alcohol or drugs in your blood, you may not drive or have care or control of a bus, minibus or taxi. Violating this zero-tolerance rule results in a 24-hour driving prohibition for such vehicles.

- ✓ Zero tolerance: no alcohol or drugs in blood when driving a bus, minibus or taxi
- ✓ Violation results in a 24-hour prohibition from driving such vehicles
- ✓ The rule applies to having the vehicle in your care or control

24.4 0.05 Blood Alcohol Limit for Heavy Vehicles

A blood alcohol concentration of 0.05 or more prohibits driving a heavy vehicle (not covered by zero-tolerance), a tow truck, or a vehicle requiring safety mark placards under the Regulation respecting hazardous materials. You also cannot have care or control of such vehicles. Exception: a passenger vehicle pulling a house/tent trailer, or a motor home.

- ✓ 0.05 BAC or more prohibits driving a heavy vehicle, tow truck or placarded vehicle
- ✓ Prohibition includes having care or control of such vehicles
- ✓ Exception applies to passenger vehicle pulling house/tent trailer or a motor home

24.5 Electronic Devices Prohibition

Simply holding any portable electronic device in your hand while driving is illegal, regardless of use. This applies to cell phones, MP3/multimedia players, satellite radios, tablets, non-driving-related screens, and email/internet devices. Exception: drivers of emergency vehicles on duty.

- ✓ Holding any portable electronic device while driving is illegal regardless of use
- ✓ The law applies whether or not the device is in use
- ✓ Exception applies only to on-duty emergency vehicle drivers

24.6 Screens, GPS and Electronic Log Books

GPS is useful but a potential distraction and must be used with discernment; program it before leaving. Electronic log books must only be used when the vehicle is parked in a safe location.

- ✓ Program GPS or enter information before leaving, not while driving
- ✓ Electronic log books may only be used when parked in a safe location

24.7 Meaning of 'While Driving'

A driver stopped to comply with signage or due to traffic (red light or traffic jam) is still considered to be driving and cannot use a hand-held device. Bringing the vehicle to a safe and legal stop by the side of the road means you are no longer driving, even if the engine runs.

- ✓ Stopping at a red light or in traffic still counts as driving
- ✓ A safe, legal roadside stop means you are no longer considered driving even if engine is running
- ✓ Hand-held electronic devices cannot be used while waiting at a red light

24.8 Headrest Adjustment

Headrests, like seat belts, prevent injuries. Most heavy vehicles have stationary headrests, but where adjustable, the driver should adjust it properly before driving to avoid whiplash or neck injury in a collision.

- ✓ Adjust an adjustable headrest properly before taking to the road
- ✓ Proper headrest adjustment helps prevent whiplash in a collision

24.9 Professional Driving Attitudes: Cooperate and Keep Cool

Professional drivers must cooperate and be courteous - adjusting speed to let others merge, using the right lane and reserving the left for passing. They must stay calm and collected, avoiding needless confrontation with aggressive road users by obeying the rules of the road.

- ✓ Use the right lane and reserve the left lane for passing
- ✓ Adjust speed to help others merge into your lane
- ✓ Stay calm and avoid confrontation with aggressive road users

24.10 Stay Alert and Highway Hypnosis

Inattention is the main cause of injury accidents involving trucks, with fatigue as the leading cause. Monotonous driving, familiar routes and long hours can cause 'highway hypnosis.' If it happens, pull over to rest and take breaks every two hours or when needed.

- ✓ Fatigue is recognized as the main cause of driver inattention
- ✓ Take a break from time to time, every two hours if possible
- ✓ Pull over and rest if you experience highway hypnosis

24.11 Anticipate: Scan, Identify, Decide, Act

Anticipating means planning ahead. SCAN and OBSERVE your environment (don't stare at one point; look ahead, sides, mirrors). IDENTIFY potential dangers by reading the road and maintaining space. DECIDE the best course to prevent a collision. ACT with the right manoeuvre at the right moment.

- ✓ Scan ahead, to the sides and in mirrors rather than staring at one point
- ✓ Maintain enough space to have time to react to hazards
- ✓ Know your route, cargo and road conditions before setting out

24.12 CBs and Two-Way Radios Authorized

The device restriction does not apply to devices installed in the vehicle where only the microphone or receiver is held in hand. This covers shortwave two-way radios (CBs/walkie-talkies) that do not allow both parties to talk simultaneously.

- ✓ Installed devices where only the mic/receiver is hand-held are permitted
- ✓ CBs and walkie-talkies (non-simultaneous two-way radios) are authorized

CHAPTER 25

Upshifting (Chapter 3 – Know Your Vehicle)

25.1 Clutch Pedal Positions Explained

The clutch pedal has four key positions used during shifting: upper free play (position 1), friction point (position 2), lower free play (position 3), and clutch brake (position 4). Knowing these positions is essential to shift smoothly on a non-synchromesh transmission.

- ✓ Position 1 = upper free play
- ✓ Position 2 = friction point
- ✓ Position 3 = lower free play
- ✓ Position 4 = clutch brake

25.2 Upshifting into 1st Gear

To move off in 1st gear, press the clutch down to the lower free play (position 3), or to the clutch brake (position 4) if grinding occurs. Slowly release to the friction point until the vehicle moves, then gradually press the accelerator while releasing the clutch.

- ✓ Press clutch to position 3, or position 4 if grinding
- ✓ Release clutch to friction point (position 2) until vehicle moves
- ✓ Gradually apply accelerator while releasing clutch

25.3 Upshifting into 2nd Gear (Double-Clutching)

To upshift into 2nd gear: accelerate to 950 RPM, press clutch to friction point then to position 3 while releasing accelerator, shift into neutral, release clutch to position 1 to let engine drop to 650 RPM, press clutch to position 3 and shift into 2nd, then gradually accelerate while releasing the clutch. The same technique applies to higher gears.

- ✓ Reach 950 RPM before shifting
- ✓ Pass through neutral (N) during the shift
- ✓ Let engine drop to 650 RPM in neutral before engaging 2nd
- ✓ Use the same technique for all higher gears

25.4 RPM Requirement for Higher Gears

For higher gears, increase engine speed to 1,500 RPM to maintain an optimum torque of 1,200 RPM after subtracting the 300 RPM needed for the manoeuvre (1,500 – 300 = 1,200 RPM).

- ✓ Increase to 1,500 RPM for higher gears
- ✓ Optimum torque is 1,200 RPM after subtracting 300 RPM
- ✓ Formula: 1,500 RPM – 300 RPM = 1,200 RPM

CHAPTER 26

Minimum Number of Tiedowns

26.1 Tiedowns for Blocked/Immobilized Articles

Where an article is blocked or immobilized by a front end structure, bulkhead, another immobilized article or another device preventing forward shift, tiedown requirements depend only on length regardless of mass.

- ✓ Article no longer than 3.04 m: use at least one tiedown
- ✓ Article longer than 3.04 m: one tiedown for the first 3.04 m plus an additional tiedown for each additional 3.04 m or fraction thereof
- ✓ These rules apply regardless of the article's mass when it is blocked/immobilized

26.2 Tiedowns for Unblocked Articles

Where an article is NOT blocked or immobilized by a front end structure, blocking system or another secured article, tiedown requirements depend on both mass and length.

- ✓ Article up to 500 kg and up to 1.52 m long: at least one tiedown
- ✓ Same length but mass above 500 kg: at least two tiedowns
- ✓ Article longer than 1.52 m and up to 3.04 m: at least two tiedowns regardless of mass
- ✓ Article longer than 3.04 m: two tiedowns for the first 3.04 m plus one additional for each additional 3.04 m or fraction thereof

26.3 Working Load Limit (WLL) Certification

All tiedowns (straps, chains, etc.) used under the Regulation must bear the manufacturer's certification of Working Load Limit (WLL). The WLL is the maximum load assigned by the manufacturer that can be applied to the tiedown device or system under normal use.

- ✓ All tiedowns must bear manufacturer's WLL certification
- ✓ WLL is the maximum load the tiedown can bear under normal use
- ✓ Uncertified straps do not comply with the Regulation

26.4 Total WLL 50% Rule

The sum of all tiedown WLLs securing an article or group of articles is the total WLL. The total WLL cannot be less than 50% of the cargo's total mass secured by the system.

- ✓ Total WLL must be at least 50% of the secured cargo's total mass
- ✓ Example: cargo of 2,268 kg requires tiedown system capacity of 1,134 kg or more

CHAPTER 27

Special Rules for the Securement of Certain Types of Cargo

27.1 Purpose of Special Securement Rules

Special rules accommodate the specific characteristics of different cargo types. Drivers must know how to properly secure each type of load to prevent articles from becoming dislodged.

- ✓ You must comply with the special rules applicable to each type of load carried
- ✓ Special rules were established to accommodate the specific type of articles in the load
- ✓ Refer to the Cargo Securement Standards Regulation for detailed securement of each cargo type

27.2 Logs Securement

A log is a felled and clean-boled tree trunk or section, including utility poles and roundwood construction poles. Logs are cylindrical and tapered, requiring special securement.

- ✓ Properly securing logs requires a combination of tiedowns and blocking systems such as posts and bunks
- ✓ The term 'log' includes public utility poles, butt-treated poles and poles used in roundwood buildings

27.3 Dressed Lumber Securement

Bundles of dressed lumber are typically stacked and secured by tiedowns spanning the top, creating a higher centre of gravity and reduced tiedown effectiveness.

- ✓ Stacking bundles raises the centre of gravity and reduces tiedown effectiveness
- ✓ The Regulation prescribes special securement standards for dressed lumber bundles stacked more than one layer high

27.4 Metal Coils and Paper Rolls

Metal coils and paper rolls are heavy cylindrical objects requiring effective immobilization; paper rolls are fragile and usually carried in vans or containers.

- ✓ Metal coils, whether loaded vertically or horizontally, require effective immobilization devices and a minimum number of tiedowns for each coil
- ✓ Paper rolls are usually transported inside a van or intermodal container with special rules for immobilization
- ✓ Special securement standards apply for paper rolls transported on flatbed vehicles with no sides

27.5 Vehicles Transported as Cargo

Vehicles carried as cargo have moving parts (tires, suspension) allowing free vertical movement, requiring special securement systems, whether under or over 4,500 kg.

- ✓ Vehicles with parts allowing free vertical movement (tires, suspension) require special securement systems
- ✓ Flattened or crushed vehicles can shed dislodged components under transport forces and require special securement standards
- ✓ Vehicles over 4,500 kg, including tracked machinery/equipment, require special securement systems

27.6 Concrete Pipes Securement

Concrete pipes are cylindrical with a high friction coefficient. Large-diameter pipes may be carried one per vehicle; small pipes may be loaded several to a vehicle, braced and stacked.

- ✓ Concrete pipes must be secured to prevent shifting or rolling around
- ✓ Special securement standards apply for cargoes of small- and large-diameter concrete pipes

27.7 Intermodal and Roll-on/Roll-off Containers

Intermodal containers have integrated locking devices for securing to a chassis or flatbed; roll-on/roll-off containers have rollers and are carried on specially adapted vehicles.

- ✓ Intermodal containers are secured to a container chassis or flatbed vehicle using integrated locking devices
- ✓ Roll-on/roll-off (removable) containers are transported on vehicles specially adapted to secure the container at front and rear
- ✓ The Regulation prescribes special securement standards for both container types

27.8 Boulders Securement

A boulder is a large irregularly shaped rock, each with unique characteristics. Securement rules apply based on mass and volume thresholds.

- ✓ Boulder securement regulations concern boulders with mass above 5,000 kg or volume above 2 m^3
- ✓ Boulders with mass above 100 kg and below 5,000 kg may also be secured under the same provisions
- ✓ The Regulation contains special securement standards for the transport of boulders

27.9 Bulk Cargo Securement

Bulk covers products (aggregates, liquids, gases, granular products) piled for transport, often in open-top receptacles requiring special covering standards.

- ✓ Bulk cargo transported in dump trucks, containers or receptacles with open upper parts must follow special covering standards
- ✓ The term 'bulk' covers aggregates, liquids, gases and granular products piled for transport

CHAPTER 28

Chapter 10 – Roads Where LCVs Are Authorized and Not Authorized to Travel

28.1 Authorized Roads for LCV Travel

LCVs are restricted to specific road types, mainly divided highways and short access connections, to minimize interaction with other traffic.

- ✓ Authorized on divided lane highways and highway entrance/exit ramps
- ✓ Authorized on road segments linking entrance and exit ramps of a highway leading to opposite directions
- ✓ Authorized to access a municipal industrial park from a highway ramp for no more than 2 km
- ✓ Authorized on other roads from a highway ramp for no more than 500 m (e.g. to a restaurant)
- ✓ Authorized on roads within a municipal industrial park and on Route 271 (Laurier-Station/Saint-Flavien) for 2 km southward from boulevard Laurier

28.2 Prohibited Highway 40 Exits

Even with a special operating permit, certain highway exits are strictly off-limits for LCVs.

- ✓ Cannot use exit 174 on highway 40 to enter or exit
- ✓ Cannot use exit 203 on highway 40 to enter or exit
- ✓ Prohibition applies even with a special operating permit

CHAPTER 29

2 - Frame and Cargo Body

29.1 Side Rails and Cross Members

Check the solidity and condition of side rails and cross members (joists). Inspect visible sections around the vehicle for cracks and breaks. A side rail has a web and a flange. A scratch is not a crack; if unsure how serious a crack is, consult the person in charge of mechanical inspection.

- ✓ Defect 2.A (major): A side rail is in danger of breaking
- ✓ Defect 2.B (major): A side rail or cross member sags making a moving part (tires, wheels, steering, suspension) contact the body
- ✓ Defect 2.1 (minor): The side rail web is cracked, the flange is cracked, or a cross member is cracked or broken

29.2 Sliding Bogie Locking Pins

Check for the presence and locked position of the locking pins that secure a sliding bogie under the semi-trailer. Inspect outside the vehicle on both sides of the semi-trailer's rear wheels, ensuring pins are present and in the locked position.

- ✓ Defect 2.C (major): More than 25% of the locking pins are missing or not in the locked position
- ✓ Inspect the sliding bogie from both sides of the semi-trailer's rear wheels

29.3 Fixed Body Components

Check whether fixed components of the body (hood, body panels, fenders, bumpers) are present and securely mounted. Inspect around the vehicle.

- ✓ Defect 2.2 (minor): A fixed component of the body is missing or improperly mounted
- ✓ Covers hood, body panels, fenders, and bumpers

29.4 Bus Luggage/Auxiliary Compartment Doors

Additional check for buses including motor coaches. Check the presence and solidity of outside doors of luggage and auxiliary compartments (such as the battery compartment). A door is inadequate when it does not close or is not in proper working order.

- ✓ Defect 2.3 (minor): An outside door of a luggage or auxiliary compartment is inadequate or improperly mounted
- ✓ A door is inadequate when it does not close or is not in proper working order

CHAPTER 30

Chapter 10 - Roads Where LCVs Are Authorized and Not Authorized to Travel

30.1 Authorized Roads for LCVs

LCVs are permitted to travel only on specifically authorized road types, mainly highways and short access routes.

- ✓ Permitted on divided lane highways and highway entrance/exit ramps
- ✓ Permitted on road segments linking entrance and exit ramps leading to opposite directions
- ✓ Permitted to access a municipal industrial park from a highway ramp for no more than 2 km
- ✓ Permitted on other roads from a highway ramp for no more than 500 m (e.g. going to a restaurant)
- ✓ Permitted on roads within a municipal industrial park and on Route 271 in Laurier-Station/Saint-Flavien for 2 km southward from boulevard Laurier

30.2 Prohibited Roads for LCVs

Even with a special operating permit, certain highway exits remain off-limits to LCVs.

- ✓ Not authorized to use exit 174 on highway 40 to enter or exit the highway
- ✓ Not authorized to use exit 203 on highway 40 to enter or exit the highway

CHAPTER 31

Chapter 12 – Circle Check of a Vehicle: Motor Coaches

31.1 Circle Check of a Motor Coach

The motor coach circle check is a sight and sound check of accessible parts following the same steps as a city bus. However, the vehicle's configuration may make the suspension system inaccessible, and the chassis frame and body components are usually monocoque, making parts and accessories specific to this vehicle type.

- ✓ Follow the same circle check steps as a city bus
- ✓ The suspension system may be inaccessible due to vehicle configuration
- ✓ Chassis frame and body are generally monocoque type with specific parts

CHAPTER 32

Negotiating a Curve

32.1 Approaching and controlling speed in curves

Check the curve's sharpness as far in advance as possible. You cannot change the curve or pavement, but you control your speed — the crucial factor. To slow, ease off the accelerator or downshift; if you must brake, do so before the curve while still travelling straight. Choose a gear allowing slight acceleration in the curve to keep the vehicle stable.

- ✓ Speed is the crucial factor when negotiating a curve
- ✓ Brake before entering the curve while travelling in a straight line, not in the curve
- ✓ Select the right gear before the curve and avoid braking or downshifting in the curve

32.2 High centre of gravity risk

Because most heavy vehicles have a high centre of gravity, entering a curve at high speed could cause loss of control, swerving or overturning. High driving skill is required.

- ✓ Heavy vehicles have a high centre of gravity and can overturn if speed is too high
- ✓ Reduce speed before curves to avoid losing control or rolling over

32.3 Controlling Speed in Curves

Speed is the crucial factor in curves. Visually check the sharpness of a curve as far in advance as possible. If you must brake, do so before the curve while travelling in a straight line, and choose a gear that lets you accelerate slightly in the curve to keep the vehicle stable.

- ✓ Brake before the curve while travelling in a straight line, not in the curve
- ✓ Avoid braking or downshifting while in a curve
- ✓ Be in the right gear before entering the curve
- ✓ Slightly accelerate through the curve to keep the vehicle stable

32.4 High Centre of Gravity Risk

Most heavy vehicles have a high centre of gravity, so drivers need high skill in curves. Going into a curve at high speed can cause loss of control, swerving or overturning.

- ✓ Entering a curve too fast can cause loss of control, swerving or rollover
- ✓ A high centre of gravity increases rollover risk in curves

32.5 Lane positioning in curves

Keep an eye on oncoming vehicles straying near the centre line. For a right curve, edge toward the centre line/far left of your lane, hold until you exit, then return to the middle. For a left curve, edge to the right side of your lane, hold until exit, then return to the middle. Accelerate gradually as you exit.

- ✓ Right curve: position near the centre line/left side of the lane
- ✓ Left curve: position toward the right side of the lane
- ✓ Hold the position until exiting, then return to lane centre and accelerate gradually

32.6 Lane Positioning Through Curves

Watch oncoming vehicles for straying toward the centre line. Before a right curve, edge to the far left of your lane (near the centre line) and hold until exiting, then return to the middle. Before a left curve, edge to the right side of the lane and hold until exiting. Accelerate gradually when exiting.

- ✓ Before a right-turning curve, edge toward the centre line/far left of your lane
- ✓ Before a left-turning curve, edge to the right side of your lane
- ✓ Hold the position until you exit the curve, then return to lane centre
- ✓ Accelerate gradually as you exit the curve

CHAPTER 33

What Causes Skidding?

33.1 Causes of Skidding

Skidding is usually caused by travelling too fast on damaged, slippery or snow-covered surfaces, causing tires to lose traction. It can happen from braking too abruptly, taking a curve too quickly, or driving up or down a hill.

- ✓ Skidding is most often caused by travelling too fast for road conditions
- ✓ Common causes: braking too abruptly, taking curves too fast, driving up/down hills

33.2 Ways to Avoid Skidding

It is very hard to regain control of a heavy vehicle once it skids, so drive defensively to prevent skidding. Reduce speed according to road conditions, keep a safe following distance, check the semi-trailer in mirrors when braking, and do not use the hand brake to slow down.

- ✓ Reduce speed as dictated by road conditions and layout
- ✓ Maintain sufficient distance from other road users to avoid abrupt braking
- ✓ Check the semi-trailer in rearview mirrors every time you brake and release brakes if it starts to skid
- ✓ Do NOT use the hand brake to slow down the vehicle

33.3 Skidding from Abrupt Braking

Braking can lock the wheels and send a vehicle into a skid. On a vehicle NOT equipped with ABS, locked wheels reduce traction and skid, requiring greater stopping distance. You must adjust driving to maintain control.

- ✓ Locked wheels (no ABS) reduce traction and increase stopping distance
- ✓ Abrupt braking can cause wheels to lock and skid

33.4 Skidding on Hills

A skid can occur going up or down a hill when acceleration force exceeds traction, especially on slippery pavement or when going too fast. Going up a hill, wheels spin in place and the rear veers to the side. Going down, skid risk is greater on slippery pavement or when braking.

- ✓ Uphill skid: wheels spin in place and rear end veers to the side
- ✓ Downhill skid risk is greater on slippery pavement or when braking to slow down

33.5 Skidding While Driving Up or Down a Hill

A skid can occur when the force of acceleration exceeds the traction between tires and pavement, especially on slippery surfaces or when travelling too fast. Going uphill, the wheels spin and the rear end veers to the side. Going downhill, the risk is greater if the pavement is slippery or you brake to slow down.

- ✓ Skidding occurs when acceleration force exceeds tire traction
- ✓ Uphill: wheels spin in place and rear end veers to the side
- ✓ Downhill: braking on slippery pavement increases skid risk
- ✓ Apply proper hill driving techniques from Chapter 5

CHAPTER 34

Securement Inspection

34.1 Visual Inspection Before Departure

Drivers must perform a visual inspection of the vehicle's securement components and ensure cargo does not interfere with driving or exiting the cab.

- ✓ Ensure the tailgate, tailboard, doors, tarpaulins, spare tire, tire rack and other operating equipment are secured
- ✓ Ensure cargo does not interfere with your ability to drive the vehicle safely
- ✓ Ensure cargo does not hinder a person from freely exiting the cab or driver's compartment

34.2 Inspection Timing of Cargo Securement System

Drivers must inspect and adjust the cargo securement system before driving and shortly after loading.

- ✓ Inspect and make necessary adjustments before driving the vehicle
- ✓ Inspect and make adjustments not more than 80 km from the point where cargo was loaded

34.3 Re-inspection Triggers

The cargo and securement system must be re-inspected regularly, with adjustments including adding tiedowns, when specific conditions occur.

- ✓ Re-inspect when your activities or duty status changes
- ✓ Re-inspect when the vehicle has been driven for 3 hours
- ✓ Re-inspect when the vehicle has travelled 240 km
- ✓ Make necessary adjustments including adding more tiedowns if needed

34.4 Inspection Exemptions

Drivers are exempt from inspecting cargo and the securement system only in two specific situations under the Regulation.

- ✓ Exempt when cargo is sealed in a vehicle and the driver has been ordered not to open it
- ✓ Exempt when the vehicle is loaded in a manner that prevents access to the cargo or portions of it

34.5 Cargo Securement Inspection Timing

Drivers must inspect cargo and the securement system and make adjustments before driving and again not more than 80 km from the loading point. Regular re-inspection with adjustments (including adding tiedowns) is required in specific situations.

- ✓ Inspect before driving and again within 80 km of the loading point
- ✓ Re-inspect when your activities or duty status changes
- ✓ Re-inspect after the vehicle has been driven for 3 hours
- ✓ Re-inspect after the vehicle has travelled 240 km

34.6 Pre-Departure Visual Inspection

Before departure and during the trip, drivers must visually inspect that the tailgate, tailboard, doors, tarpaulins, spare tire, tire rack and other equipment are secured, and ensure cargo does not interfere with safe driving or block exit from the cab.

- ✓ Verify tailgate, tailboard, doors, tarpaulins, spare tire, tire rack and equipment are secured
- ✓ Cargo must not interfere with the ability to drive safely
- ✓ Cargo must not hinder a person from freely exiting the cab or driver's compartment

CHAPTER 35

Physical Factors That Affect Driving

35.1 Load Distribution in the Vehicle

Improper load distribution can cause loss of control when reacting quickly. To improve stability and avoid overturning, keep the centre of gravity as low as possible. Load in each semi-trailer must be distributed properly over the axle groups in compliance with the Vehicle Load and Size Limits Regulation.

- ✓ Distribute load evenly to avoid losing control during quick reactions
- ✓ Keep the centre of gravity as low as possible to improve stability and avoid overturning
- ✓ Distribute load in each semi-trailer properly over axle groups per the Vehicle Load and Size Limits Regulation

35.2 Positioning Semi-Trailers by Weight

The longest and heaviest semi-trailer must be hitched to the tractor. If the semi-trailers are not positioned in this order, you could lose control of the second semi-trailer when braking.

- ✓ The longest and heaviest semi-trailer must be hitched to the tractor (first position)
- ✓ Incorrect positioning can cause loss of control of the second semi-trailer when braking

35.3 Effect of Load on Acceleration

Increasing a vehicle's load reduces its acceleration force. A double road train needs more time to enter traffic or resume speed after stopping, and the extra load forces you to reduce speed even more in curves.

- ✓ Increased load reduces acceleration force, requiring more time to enter traffic or resume speed
- ✓ Extra load requires you to reduce speed even more in curves

35.4 Length of a Double Road Train

Because of its length, a double road train performs poorly when passing or making evasive manoeuvres. Crosswinds aggravate this problem, especially in curves. You must anticipate how the vehicle will react to maintain control.

- ✓ A double road train does not perform as well as shorter vehicles when passing or making evasive manoeuvres
- ✓ Crosswinds aggravate handling problems, especially when negotiating a curve
- ✓ Anticipate the vehicle's reaction to react in time and maintain control

35.5 Number of Articulations

Space needed for manoeuvres depends on number and position of axles, length of tractor and semi-trailers, and number of articulations. More articulations increase the risk of the second semi-trailer weaving, deviating from the tractor's trajectory, crossing lanes, and overturning.

- ✓ The more articulations a combination has, the greater the risk of the second semi-trailer weaving
- ✓ A weaving second semi-trailer may deviate from the tractor's trajectory and cross into another lane
- ✓ Double road trains take up a lot of road space, increasing collision risks with installations, vehicles and pedestrians

35.6 Length and Number of Articulations

A double road train's length and multiple articulations reduce its ability to pass or make evasive manoeuvres and increase the risk of the rear trailer weaving.

- ✓ Long length reduces passing and evasive performance; crosswinds worsen this, especially in curves
- ✓ More articulations increase the risk of the second semi-trailer weaving and crossing lanes
- ✓ Consider number/position of axles, length of tractor and trailers, and number of articulations when turning
- ✓ Double road trains take much space, increasing collision risk with installations, parked vehicles and pedestrians

CHAPTER 36

Chapter 10 – Responsibilities of Special Permit Holders and Requirements

36.1 Driver's Licence and T Endorsement Requirements

Operating an LCV requires a top-level licence class with an additional endorsement that has strict experience and training prerequisites.

- ✓ Must hold a Class 1 driver's licence with a T endorsement
- ✓ Must have held a Class 1 licence for at least 5 years to obtain the T endorsement
- ✓ Must complete the mandatory LCV training program (vehicles longer than 25 m) at a road transport training centre (Charlesbourg or Saint-Jérôme)

36.2 Special Permit Holder Obligations

The holder of a special LCV operating permit has several ongoing legal responsibilities regarding data, incident reporting, and driver compliance.

- ✓ Must provide driver monitoring system data when requested by a carrier enforcement officer or peace officer
- ✓ Must notify the Ministère des Transports du Québec of any accident or traffic jam caused by the LCV within two days
- ✓ Must operate the tractor as an operator under the Act respecting owners, operators and drivers of heavy vehicles
- ✓ Must ensure the driver complies with all driving restrictions on roads, hours and weather conditions

CHAPTER 37

Inspections During Your Trip

37.1 Mandatory Brake Testing at Designated Areas

During a trip you must perform certain mandatory inspections, including stopping at areas designated by the brake-check road sign to test your brakes. You should also re-inspect the braking system as done during the circle check; this takes only a few minutes and can be done from the cab.

- ✓ Stop at areas designated by the brake-check road sign to test your brakes
- ✓ Perform a braking system inspection as done during the circle check, which can be done in the cab in a few minutes

37.2 Checking Wheel Temperature and Hubs

During a trip, check wheel temperature to confirm proper brake adjustment and reduce risk of losing a wheel. Look for lubricant traces near hubs, intense heat, smoke, or burnt smell. Lubricant near a hub may mean a damaged hub ring seal or a bearing about to slip out of the cup.

- ✓ Check wheel temperature to ensure adequate brake adjustment and no risk of losing a wheel
- ✓ Check for lubricant traces near wheel hubs, intense heat, smoke, or burnt smell before continuing
- ✓ Traces of lubricant near a hub may indicate a damaged hub ring seal or a bearing about to slip out of the cup

37.3 Diagnosing an Overheating Wheel

If one wheel produces more heat than the others, the wheel bearing may be faulty or the brake misadjusted. Wait for the wheel to cool before making a thorough check to determine the cause and ensure safe continuation.

- ✓ A wheel hotter than others may signal a faulty bearing or misadjusted brake
- ✓ Wait for the wheel to cool before a thorough check and confirm you can continue safely

37.4 Re-Tightening Recently Changed Wheels

If a wheel has recently been changed, check that it is tight enough after travelling between 80 and 160 km. Wheels should preferably be tightened by a mechanic according to manufacturer standards.

- ✓ Recheck the tightness of a recently changed wheel after travelling 80 to 160 km
- ✓ Wheels should preferably be tightened by a mechanic per manufacturer standards

CHAPTER 38

Chapter 1 - Rules

38.1 Circle Check and Hours of Driving Regulations

Under the Highway Safety Code, drivers must have their vehicle inspected each day and at intervals (circle check). The Regulation respecting hours of driving and rest of heavy vehicle drivers reduces accident risk; operators must ensure drivers can drive safely.

- ✓ Vehicles must undergo a daily inspection known as a circle check
- ✓ The Regulation respecting hours of driving and rest applies to drivers and operators
- ✓ Operators must ensure their drivers are able to drive safely

38.2 Vehicle Load and Size Limits Regulation

The Vehicle Load and Size Limits Regulation sets standards limiting size, load per axle group and total loaded mass on public roads. Vehicles not meeting these standards are outsized or overloaded and cannot use public roads without a special permit.

- ✓ The regulation limits size, load per axle group and total loaded mass
- ✓ Outsized or overloaded vehicles require a special permit to use public roads
- ✓ Consult the Ministère des Transports for special permit information

38.3 Training Requirements for Special Cargo and Cross-Border Driving

Drivers of dangerous substances must be trained and carry an employer's certificate. School bus drivers must be trained on school children safety and hold a certificate of competency. Drivers outside Québec must know local laws; U.S. heavy vehicle drivers must be at least 21, and driving-hour rules and defect classifications may differ.

- ✓ Dangerous substance drivers need training and an employer's certificate
- ✓ School bus drivers need training and a certificate of competency on child safety
- ✓ Heavy vehicle drivers in the United States must be at least age 21

CHAPTER 39

Downshifting (Chapter 3 – Know Your Vehicle)

39.1 Double-Declutching Technique Requirement

When downshifting a non-synchromesh manual transmission, you must use double-declutching to prevent friction between components and premature wear. It requires shifting into neutral and increasing engine speed before engaging the lower gear.

- ✓ Use double-declutching to protect non-synchromesh transmission
- ✓ Must shift into neutral
- ✓ Must increase engine speed before downshifting

39.2 Downshifting Technique Procedure (5th to 4th)

Slow with the service brake until 1,200 RPM and push clutch to friction point; keep RPM steady and push clutch to position 3 while releasing accelerator; shift to neutral; release clutch to position 1; press accelerator to raise engine speed by 300 RPM to reach 1,500 RPM; release accelerator while pushing clutch to position 3 and shift into 4th; release clutch to complete.

- ✓ Reduce engine speed to no faster than its maximum RPM in neutral
- ✓ Slow with service brake to 1,200 RPM before starting
- ✓ Increase RPM by 300 (to 1,500) before engaging lower gear
- ✓ Practise double-clutching on flat terrain

CHAPTER 40

Chapter 10 - Responsibilities of Special Permit Holders and Requirements

40.1 Driver's Licence and T Endorsement Requirements

Operating an LCV requires a Class 1 licence with a special T endorsement, obtained after experience and mandatory training.

- ✓ Must hold a Class 1 driver's licence with a T endorsement to operate an LCV
- ✓ Must have held a Class 1 driver's licence for at least 5 years to obtain a T endorsement
- ✓ Must complete the mandatory training program for drivers of LCVs (longer than 25 m) at Charlesbourg or Saint-Jérôme training centres

40.2 Responsibilities of Special Permit Holders

Holders of a special LCV operating permit have several obligations regarding data provision, incident reporting, and compliance oversight.

- ✓ Must provide driver monitoring system data when requested by a carrier enforcement officer or peace officer
- ✓ Must notify the Ministère des Transports du Québec of any accident or traffic jam caused by the LCV within two days
- ✓ Must operate the tractor as an operator under the Act respecting owners, operators and drivers of heavy vehicles
- ✓ Must ensure the driver complies with driving restrictions on roads, hours and weather conditions

CHAPTER 41

Chapter 12 – Inspections While on the Road

41.1 Scheduled Inspection Intervals

Conduct a new inspection 80 kilometres after setting out on a trip, since all systems have generally been used by then. After that, inspect every 160 kilometres or every two hours, checking critical systems: tires, brakes, lighting, coupling mechanism, and cargo securement.

- ✓ Perform a new inspection 80 km after starting a trip
- ✓ After that, inspect every 160 km or every two hours
- ✓ Check tires, brakes, lighting, coupling mechanism, and cargo securement
- ✓ Perform checks during rest stops and prefer service areas for safety

41.2 Ongoing Vehicle Condition Monitoring

Vehicle safety depends on more than maintenance and circle checks; component conditions can deteriorate at any time. Drivers must be attentive to signs of breakdown or degraded cargo securement and should stop in a safe location to inspect if they note unusual noises, reactions, or warning lights.

- ✓ Stop in a safe, appropriate location if you notice unusual noise or reaction
- ✓ Stop and inspect if a warning light switches on
- ✓ Be attentive to signs of eventual breakdown or degradation of securement

CHAPTER 42

Spring Thaw Restrictions

42.1 Spring Thaw Road Vulnerability

During spring thaw, road resistance decreases by 40% and roads become especially vulnerable to heavy vehicle weight. Each truck pass during thaw impacts pavement like several trucks in normal conditions, so limiting loads is critical. Stricter load limits are enforced during this period.

- ✓ Road resistance decreases by 40% during spring thaw
- ✓ Stricter load limits are enforced during the spring thaw period

42.2 Load Restriction Period and Zones

The load restriction period is usually March to May, with dates adjustable by weather. Québec is divided into three zones: Zone 1 (southern Québec to Rivière-du-Loup), Zone 2 (north of Zone 1), Zone 3 (north of Zone 2). All heavy vehicles are subject to these temporary weight restrictions based on configuration and axle type.

- ✓ Load restriction period usually runs March to May, adjustable by weather
- ✓ All heavy vehicles must comply with spring thaw weight restrictions per zone

42.3 Consulting Load Limit Information

Zones and spring thaw periods can vary from year to year. Drivers should consult Transport Québec's information service and bulletins for details about load limits. Authorized load limits are listed in the Vehicle Load and Size Limits Regulation.

- ✓ Consult Transport Québec bulletins for annual spring thaw load limits
- ✓ Authorized load limits are in the Vehicle Load and Size Limits Regulation

CHAPTER 43

Inattentiveness

43.1 Highway Hypnosis

Inattentiveness from driving along monotonous roads requiring little manoeuvering can lead to 'highway hypnosis' and can even cause you to fall asleep at the wheel.

- ✓ Monotonous surroundings and roads requiring little manoeuvering can cause highway hypnosis
- ✓ Highway hypnosis can cause you to fall asleep at the wheel
- ✓ Pay attention to the warning signs of fatigue your body sends you

43.2 Highway Hypnosis and Inattentiveness

Tired drivers make errors and can cause serious accidents, so you must heed the warning signs of fatigue. Driving on monotonous roads requiring little maneuvering can cause 'highway hypnosis' and even cause you to fall asleep at the wheel.

- ✓ Pay attention to the warning signs of fatigue your body is sending
- ✓ Monotonous surroundings requiring little maneuvering can lead to 'highway hypnosis'
- ✓ Highway hypnosis can cause you to fall asleep at the wheel

CHAPTER 44

The Right RPM Is Important for Your Engine (Chapter 3)

44.1 Effects of Wrong RPM

An engine turning too slowly tends to lurch and can damage the vehicle. An engine turning too fast consumes fuel needlessly and provides no additional power. Consult the manufacturer's manual for recommended RPM ranges.

- ✓ Too-low RPM causes lurching and possible damage
- ✓ Too-high RPM wastes fuel without adding power
- ✓ Consult manufacturer's manual for RPM ranges

44.2 Progressive Shifting and Using the Tachometer

All engines have a top RPM. Changing gears before reaching that limit (progressive shifting) saves fuel. The tachometer is a more reliable way to determine when to change gears than listening to the engine or checking speed.

- ✓ Change gears before the engine reaches its top RPM
- ✓ Progressive shifting saves fuel
- ✓ Tachometer is more reliable than engine sound or speed for shift timing

44.3 Consequences of Wrong RPM

An engine turning too slowly lurches and can damage the vehicle. An engine turning too fast wastes fuel and provides no extra power. Consult the manufacturer's manual for recommended RPM ranges.

- ✓ Too-low RPM causes lurching and vehicle damage
- ✓ Too-high RPM wastes fuel without extra power
- ✓ Consult the manufacturer's manual for RPM ranges

44.4 Using the Tachometer to Change Gears

All engines have a top RPM; change gears before reaching it (progressive shifting) to save fuel. Referring to the tachometer is more reliable than listening to the engine or checking speed.

- ✓ Change gears before reaching top RPM
- ✓ Tachometer is more reliable than engine sound or speed for shifting
- ✓ Progressive shifting saves fuel

CHAPTER 45

3 - Heater/Defroster

45.1 Windshield Blower Working Order

Check the working order of the windshield blower. In the cab, switch on the blower, direct air flow toward the windshield, and check whether air blows onto it. Only manufacturer-provided components are covered; auxiliary systems are not. Under section 265 of the Highway Safety Code, the windshield must be free of any material (including fog) that reduces driver visibility.

- ✓ Defect 3.1 (minor): The windshield blower is not working
- ✓ The defect does not cover air temperature, but in winter air must be warm enough to defrost for best visibility
- ✓ Under Highway Safety Code section 265, the windshield must be free of any material (fog counts) reducing visibility

CHAPTER 46

20 - Passenger Transport

46.1 Stanchions, Bars, Grab Handles and Guard Panels

Section 20 applies exclusively to buses and minibuses configured to carry passengers and is in addition to earlier sections. Inspect stanchions, horizontal bars, grab handles, guard panels, and any manufacturer-provided shock-absorbing material from inside the vehicle (e.g., from the central aisle in a vehicle carrying more than 24 passengers). Although the circle check is primarily sight and sound, apply light pressure if in doubt about solidity.

- ✓ Defect (20.1): stanchions, horizontal bars, grab handles and guard panels are not securely mounted
- ✓ Defect (20.2): manufacturer-provided shock-absorbing material on stanchions is missing or inadequate (worn/broken to the point of no longer providing protection)

46.2 Floor and Steps in Passenger Compartment

Check the condition of the floor and steps. Inspect steps outside before entering and inspect the visible floor surface inside, especially the central aisle and areas between seats. A defect exists when the floor condition poses a danger to occupants.

- ✓ Defect (20.3): the floor or a step in the passenger compartment is cracked, worked (misshapen) or perforated
- ✓ A defect exists only when the floor condition poses a danger to occupants

46.3 Central Aisle and Entrance Lighting

Check the working order of the central aisle and passenger entrance lighting systems. Activate the lighting switch for the central aisle, entrance and exit steps and boarding space, and confirm they can be illuminated.

- ✓ Defect (20.4): the central aisle, entrance or exit steps, or boarding space cannot be illuminated

46.4 Overhead Luggage Racks and Passenger Seats

Check the solidity and condition of overhead luggage racks/compartments and passenger seats and benches. Inspect racks to ensure they are securely mounted and can retain luggage. Walk the central aisle to inspect seat/bench position and condition, including folding (one-man) seats. Apply light pressure if in doubt about solidity.

- ✓ Defect (20.5): a top luggage rack or compartment is not securely mounted or cannot retain luggage
- ✓ Defect (20.6): a seat or bench is inadequate (not in good working order to the point of being unsafe)

46.5 School Bus Retractable Stop Sign

For school buses, check the condition of the retractable stop sign. Activate deployment of the retractable stop sign on the left side of the driver's compartment and check its position relative to the side of the bus from outside. Although a minor defect does not prohibit operation, the Highway Safety Code requires drivers to use the stop sign to take on or discharge school children or persons under 18; if defective and cannot be deployed, the driver may not take on or discharge such persons.

- ✓ Defect (20.7): the stop sign does not move into a position perpendicular to the bus
- ✓ If the stop sign cannot be deployed, the driver may not take on or discharge school children or persons under 18
- ✓ Failure to use the stop sign is an offence under section 456 of the Highway Safety Code (fine $600 to $2,000)

46.6 School Bus Flashing Red Lights

For school buses, check the working order of the flashing red lights. Switch them on and check the front right, front left, rear right and rear left lights from outside. The Highway Safety Code requires drivers to activate flashing red lights to take on or discharge school children or persons under 18.

- ✓ Defect (20.8): one or more front and rear flashing red lights do not work when switched on
- ✓ If both rear or both front flashing lights fail, the driver may not take on or discharge school children or persons under 18
- ✓ Failure to activate flashing red lights is an offence under section 456 of the Highway Safety Code (fine $600 to $2,000)

46.7 School Bus Stop Sign Flashing Lights

For school buses, check the working order of the alternately flashing lights on the stop sign. Activate the retractable stop sign and check the flashing lights at the top and bottom.

- ✓ Defect 20.7 (minor): one or more alternately flashing lights does/do not switch on when the stop sign is perpendicular to the vehicle
- ✓ Check both top and bottom flashing lights of the stop sign

46.8 School Bus Flashing Lights on Stop Sign

For school buses, check the alternately flashing lights on the stop sign. Activate the retractable stop sign and check the flashing lights at the top and bottom of the sign.

- ✓ Defect (20.7): one or more alternately flashing lights on the stop sign do not switch on when the sign is perpendicular to the vehicle

46.9 School Bus Alternately Flashing Yellow Lights

For school buses, check the working order of the alternately flashing yellow lights. This check must only be performed under safe conditions; do not attempt unsafe manoeuvres. In front, activate the switch and check the front yellow lights through the convex mirrors. In the rear, activate the switch, open the rear door, and safely check the rear yellow lights. Record in the report if the check could not be safely performed.

- ✓ Defect (20.8): one or more alternately flashing yellow lights do not work when switched on
- ✓ Only perform this check under safe conditions; note in the circle check report if it cannot be performed

46.10 Overhead Luggage Racks and Compartments

Check the solidity and condition of overhead luggage racks or compartments inside the passenger compartment. Make sure they are securely mounted and can retain luggage safely; apply light pressure if in doubt.

- ✓ Defect 20.5 (minor): a top luggage rack or compartment is not securely mounted or cannot retain luggage
- ✓ Racks and compartments must retain luggage safely

46.11 Passenger Seats and Benches

Check passenger seats and benches while walking the central aisle. Inspect their position and general condition, including one-man folding seats. Apply light pressure if you doubt solidity.

- ✓ Defect 20.6 (minor): a seat or bench is inadequate — not in good working order to the point of being unsafe
- ✓ Folding (one-man) seats must also be checked

CHAPTER 47

Loading in Closed and Flatbed Vehicles

47.1 Closed Vehicle Loading

Cargo in a closed vehicle must be distributed to cover all available interior space, with articles immobilized by direct contact with the walls or with other cargo. If goods cannot cover the entire space, immobilization devices must be used.

- ✓ Distribute cargo to cover all available space inside a closed vehicle
- ✓ Immobilize articles by direct contact with walls or other cargo
- ✓ If space cannot be filled, use blocking systems, bracings, dunnage, dunnage bags, shoring bars, tiedowns or combinations

47.2 Flatbed Vehicle Loading

For goods on a flatbed vehicle, tiedowns must be used to properly secure all articles to the vehicle. If any article is in danger of shifting, it must be immobilized with chocks, wedges, cradles or other securement devices.

- ✓ Tiedowns must secure all articles on a flatbed vehicle
- ✓ Use chocks, wedges, cradles or other devices if cargo could shift during transport

CHAPTER 48

Highway Carrier Monitoring

48.1 Roadside Inspection Requirements

Heavy vehicle drivers may be subject to roadside inspections. You must stop and cooperate with the peace officer. Inspections may cover driver's licences, vehicle registration, register entry, transport permits, bills of lading, leasing contracts, hours of driving/duty, circle checks, mechanical condition, weight and size, IFTA registration, load securement, dangerous substances, and traffic compliance.

- ✓ You must stop and cooperate with a peace officer during a roadside inspection
- ✓ Inspections may cover licence, registration, hours, circle checks, weight, load and more

48.2 SAAQ and Contrôle Routier Québec Mandate

The SAAQ ensures vehicles carrying passengers or goods in Québec comply with applicable regulations, ensuring road safety, protecting infrastructures and guaranteeing fair competition. Contrôle routier Québec ensures operators comply with laws like the Highway Safety Code, Transport Act, and Act respecting owners, operators and drivers of heavy vehicles.

- ✓ The SAAQ monitors compliance of passenger and goods carriers in Québec
- ✓ Contrôle routier Québec enforces the Highway Safety Code and Transport Act

CHAPTER 49

Distractions

49.1 Effects of Distractions on Driving

Distractions decrease a driver's vigilance and performance. A distracted driver processes only half the available information from the environment — they look but do not see what is happening.

- ✓ Avoid external distractions such as smoking, eating, drinking and using electronic devices
- ✓ A distracted driver processes only half of the available information from the environment
- ✓ A distracted driver looks but does not see what is happening

CHAPTER 50

Turning at an Intersection

50.1 Preparing to turn at an intersection

Turning risks straying into other lanes/median, striking obstacles or causing accidents. As you approach: get in the proper lane, gradually slow and adjust speed, check mirrors and blind spots then signal, shift into the right gear before turning (manual transmission), and confirm enough space for your vehicle size and obstacles.

- ✓ Be in the proper turning lane and slow gradually to avoid braking/downshifting mid-turn
- ✓ Check rearview mirror and blind spots, then signal
- ✓ Shift into the correct gear before turning with a manual transmission
- ✓ Verify enough space considering vehicle size and obstacles

50.2 Executing the turn and off-tracking

While turning, check the driving environment throughout, begin the turn as your vehicle enters the intersection, and accelerate gently coming out. Rear wheels trace a shorter path than front wheels (off-tracking), so steer to use all available space. You may need to encroach on the next lane with front wheels, though this is prohibited by law in some situations.

- ✓ Rear wheels track a shorter path than front wheels — compensate by using all available space
- ✓ If encroaching on the next lane, ensure rear wheels don't trespass onto sidewalk, shoulder or another lane
- ✓ Keep space between vehicle and roadside minimal to keep out pedestrians/vehicles

50.3 Right turns procedure

Keep your vehicle in the right lane, watch for road users venturing into the space between the vehicle and the roadside. After checking left-right-left, start the turn holding the front end close to the dividing line on the left of the lane you are entering, encroaching slightly only if necessary and the way is clear. Continue straight close to the dividing line ensuring rear wheels don't trespass onto sidewalk/shoulder, then steer back to lane centre.

- ✓ Stay in the right lane and watch for road users beside your vehicle
- ✓ Check left, right, then left again before turning
- ✓ Ensure rear wheels do not trespass onto the sidewalk or shoulder

50.4 Left turns procedure

Steer into the appropriate lane, edging right if necessary. After checking left-right-left, proceed with the front end close to the dividing line of the other road, edging to the right of the lane you are entering; encroach slightly on the other right-hand lane only if needed and clear. Continue close to the right-hand dividing line until nearly complete, keeping rear wheels off the centre line, then return to the lane centre.

- ✓ Check left, right, then left again before proceeding
- ✓ Keep rear wheels from crossing the centre line during the left turn
- ✓ Steer back to the centre of the lane once the turn is almost complete

50.5 Basics of Approaching an Intersection Turn

Turning risks straying into other lanes/median, striking obstacles or causing accidents. When approaching, be in the proper lane, gradually slow down to avoid braking/downshifting during the turn, check mirrors and blind spots, signal, shift into the right gear, and confirm you have enough space.

- ✓ Be in the proper lane and slow down gradually before the turn
- ✓ Check rearview mirror and blind spots, then signal
- ✓ Shift into the right gear before turning (manual transmission)
- ✓ Confirm you have enough space considering vehicle size and obstacles

50.6 Rear Wheel Off-Tracking

Rear wheels trace a shorter path than front wheels (off-tracking). To compensate, steer the front to use all available space and sometimes encroach on the next lane with front wheels (prohibited by law in some situations). Ensure rear wheels do not trespass onto sidewalks, shoulders or other lanes, and keep the gap to the roadside small.

- ✓ Rear wheels trace a shorter path than front wheels (off-tracking)
- ✓ Steer the front to use all available space to compensate
- ✓ Ensure rear wheels do not trespass onto sidewalk, shoulder or another lane
- ✓ Keep space between vehicle and roadside as small as possible to prevent others from entering

50.7 Making Right Turns

Keep your vehicle in the right lane and watch for road users in the space between your vehicle and the road edge. After checking left, right, then left again, hold the front end close to the dividing line on the left of the lane you are entering. Continue straight close to the dividing line so rear wheels do not trespass, then steer back to lane centre.

- ✓ Keep in the right lane and watch for road users squeezing on the right
- ✓ Check left, right, then left again before turning
- ✓ Hold the front end close to the dividing line of the lane you are entering
- ✓ Ensure rear wheels do not trespass onto sidewalk or shoulder
- ✓ Limit the space between your vehicle and the roadside

50.8 Making Left Turns

Steer into the appropriate lane, edging right if necessary. After checking left, right, then left again, steer so the front end is close to the dividing line of the other road and edge right in the lane you enter. Continue close to the right-hand dividing line until nearly complete, ensuring rear wheels do not cross the centre line, then return to lane centre.

- ✓ Edge over to the right side of the lane if needed before a left turn
- ✓ Check left, right, then left again before proceeding
- ✓ Keep front end near the dividing line and ensure rear wheels do not cross the centre line
- ✓ Steer back to the centre of the lane after completing the turn

50.9 Left turns with two turn lanes

Some heavy vehicle configurations require encroaching on the far right-hand lane to complete a left turn, avoiding successive lane changes. If a parallel vehicle is turning left at the same time, or one from the opposite direction turns right, that vehicle has the right of way. Where two left-turn lanes exist, turn from the outside (far right) lane to avoid trespassing and unseen vehicles, but watch for surprising the driver in the other left-turn lane.

- ✓ If encroaching on another lane during a left turn, a parallel or oncoming-turning vehicle has the right of way
- ✓ With two left-turn lanes, turn from the outside/far right lane to avoid an unseen vehicle to your right

50.10 During the Turn

Check the driving environment throughout the manoeuvre, begin the turn as soon as your vehicle enters the intersection, and accelerate gently coming out. Turning requires high skill and continuous visual checks.

- ✓ Begin your turn as soon as your vehicle enters the intersection
- ✓ Check the driving environment throughout the entire manoeuvre
- ✓ Accelerate gently as you come out of the turn

50.11 Turning From Dual Left-Turn Lanes

Some heavy vehicles must encroach on the far right lane to complete a left turn to avoid successive lane changes—but vehicles in a parallel lane turning left, or oncoming vehicles turning right, have the right of way. Where two left-turn lanes exist, make your turn from the outside/far right lane.

- ✓ If encroaching on adjacent lanes during a left turn, other vehicles have the right of way
- ✓ When two left-turn lanes exist, turn from the outside/far right lane
- ✓ Be alert that this manoeuvre may surprise a driver in the other left-turn lane

CHAPTER 51

How to Avoid Skidding

51.1 Defensive Techniques to Avoid Skidding

It is very hard to regain control of a heavy vehicle once it skids, so prevention through defensive driving is best. Reduce speed for road conditions, keep sufficient distance from others to avoid abrupt braking, check the semi-trailer in mirrors every time you brake, and never use the hand brake to slow down.

- ✓ Reduce speed as dictated by road conditions and layout
- ✓ Maintain sufficient distance to avoid abrupt braking (a frequent skid cause)
- ✓ Check the semi-trailer in mirrors every time you brake; let up if it starts to skid
- ✓ Do NOT use the hand brake to slow down your vehicle

CHAPTER 52

Tips for Proper Load Distribution

52.1 Importance of Load Distribution

Load distribution affects vehicle stability and manoeuvrability. The load's weight and centre of gravity affect handling, so the centre of gravity should be as low as possible.

- ✓ Distribute the load so its centre of gravity is as low as possible
- ✓ Load cargo so weight is distributed as evenly as possible over each axle for easier handling and compliance with load limits

52.2 Effects of Axle Overloading

Improper weight distribution across axles causes handling and traction problems that can damage the vehicle or reduce control.

- ✓ Overloading the front axles can make steering difficult and damage axles or tires
- ✓ Too much weight on the rear axles can reduce front wheel traction and make handling harder
- ✓ Insufficient weight on the drive wheels can cause the vehicle to skid, especially on slippery surfaces

52.3 Consequences of Improper Securement

A load that is not properly distributed or secured can shift or become dislodged, displacing the centre of gravity and jeopardizing stability.

- ✓ A poorly distributed or secured load is liable to shift or be dislodged
- ✓ Shifting load displaces the centre of gravity and jeopardizes the stability of the vehicle and its load

52.4 Centre of Gravity and Axle Loading

Load distribution affects stability and manoeuvrability. Distribute the load so its centre of gravity is as low as possible and its weight is spread evenly over each axle to ensure compliance with load limits and easier handling.

- ✓ Distribute the load so the centre of gravity is as low as possible
- ✓ Distribute weight as evenly as possible over each axle
- ✓ Overloading front axles makes steering difficult and can damage axles or tires

52.5 Effects of Improper Distribution

Too much weight on the rear axles reduces front-wheel traction and makes handling harder. Insufficient weight on the drive wheels can cause skidding, especially on slippery surfaces. Improperly distributed or secured loads may shift, displacing the centre of gravity and jeopardizing stability.

- ✓ Too much rear-axle weight reduces front-wheel traction
- ✓ Insufficient drive-wheel weight can cause skidding on slippery roads
- ✓ A shifting or dislodged load displaces the centre of gravity and jeopardizes stability

CHAPTER 53

Driving a Double Road Train

53.1 Special Handling of Double Road Trains

If you have mastered tractor semi-trailer techniques, you have the base skills, but double road trains react differently in weather. They may spin wheels on slippery pavement and are more likely to skid on level roads, grades, snow, or wet pavement. Know how it handles to react to unexpected hazards.

- ✓ A double road train is more likely to have wheels spin in place on slippery pavement
- ✓ It is more likely to skid on level roads, grades, snow, or wet pavement than other heavy vehicles
- ✓ Always drive safely and defensively to anticipate and avoid hazards

53.2 How to Drive Defensively

Defensive driving involves obeying speed limits and signals, paying constant attention, performing manoeuvres smoothly, looking far ahead, applying brakes gradually to prevent lockup and jackknifing, planning routes, watching for fatigue, and checking mirrors for weaving.

- ✓ Obey speed limits, road signs and traffic signals and perform manoeuvres smoothly
- ✓ Look far ahead to anticipate problems and avoid frequent braking or abrupt changes
- ✓ Apply brakes gradually to prevent wheel lockup and minimize jackknifing risk
- ✓ Check rearview mirrors regularly to ensure the second semi-trailer is not weaving

53.3 Jackknifing Definition

Jackknifing is a type of accident that occurs when the angle of lateral rotation between a fifth-wheel tractor and a semi-trailer exceeds 90°. Applying brakes gradually helps minimize this risk.

- ✓ Jackknifing occurs when the angle of lateral rotation between tractor and semi-trailer exceeds 90°
- ✓ Apply brakes gradually to prevent wheel lockup and minimize the risk of jackknifing

53.4 Fishtailing and Driving in a Straight Line

Bumpy roads, high winds, or abrupt steering can cause the second semi-trailer to weave back and forth, called fishtailing. When changing lanes, the second semi-trailer may swing widely and can gradually increase until it overturns. Fishtailing may be hard to detect, reducing reaction time.

- ✓ Fishtailing is the second semi-trailer weaving back and forth, caused by bumps, wind or abrupt steering
- ✓ Fishtailing can gradually increase to the point where the second semi-trailer overturns
- ✓ Stay focused on the road and check rearview mirrors regularly to detect and control fishtailing

53.5 Braking Capacity of a Double Road Train

In theory a double road train has greater braking capacity due to more wheels, but in practice more axles and articulations make it harder to brake evenly (stopping tractor and trailers at the same time with same power). Avoid braking abruptly or applying brakes for extended periods.

- ✓ More axles and articulations make it harder to brake evenly across the combination
- ✓ Avoid braking abruptly or applying brakes over an extended length of time
- ✓ Constantly monitor traffic and adjust speed to avoid frequent braking
- ✓ Leave enough space between you and the vehicle in front

53.6 Following Distance Formula

To determine safe following interval, divide vehicle length in metres by three and count one second for every three metres. A 24 m double road train needs an 8-second interval (24 / 3 = 8). Use a stationary roadside reference point and count seconds as the lead vehicle passes it.

- ✓ Divide the vehicle length in metres by three to get the following interval in seconds
- ✓ A 24 m double road train requires an 8-second following interval (24/3=8)
- ✓ If you reach the reference point before finishing the count, you are following too closely

53.7 Effects of Wheel Lockup

When forced to brake abruptly, avoid wheel lockup by keeping brakes in good order and load properly distributed. Front tractor wheels locking prevents steering; back tractor wheels locking can cause jackknifing; second semi-trailer wheels locking can cause fishtailing.

- ✓ If the front wheels of the tractor lock up, you cannot steer properly
- ✓ If the back wheels of the tractor lock up, the vehicle could jackknife
- ✓ If the wheels of the second semi-trailer lock up, it may begin fishtailing
- ✓ Keep the brake system in good order and load properly distributed to avoid lockup

53.8 Negotiating Curves and Turning

When turning or negotiating a curve, evaluate space needed and account for the rear axles of the second semi-trailer crossing into the other lane. How far they cross depends on total length and fifth wheel/axle adjustment. B trains turn easier (shorter wheelbase); A trains have three pivot axes and are harder to turn.

- ✓ The rear axles of the second semi-trailer tend to cross into the other lane when turning
- ✓ A B train is easier to turn because it usually has a shorter wheelbase
- ✓ An A train has three pivot axes, a longer wheelbase, and is harder to turn
- ✓ Coordinate speed and direction to steer the vehicle exactly where you want it

53.9 Right Turns

Right turns are the hardest manoeuvre due to collision risk in the adjacent lane. Keep the vehicle in the right lane, prevent road users entering the space, hold the front end close to the dividing line, keep rear wheels off the sidewalk/shoulder, then steer back to lane centre.

- ✓ Right turns are the hardest manoeuvre due to collision risk with adjacent-lane vehicles
- ✓ Keep the vehicle in the right lane and prevent other road users from entering the space
- ✓ Hold the front end close to the dividing line and keep rear wheels off the sidewalk or shoulder
- ✓ Limit the space between your vehicle and the side of the road throughout the manoeuvre

53.10 Left Turns

To turn left, steer into the left lane, check both directions, keep the front end close to the dividing line, and edge to the right side of the entered lane. Keep rear wheels off the centre line. You may need to trespass into the far right-hand lane, but other vehicles turning left beside you or turning right from opposite have the right of way.

- ✓ Keep the front end close to the dividing line and edge to the right side of the entered lane
- ✓ Ensure rear wheels do not cross over the centre line until the turn is almost complete
- ✓ If trespassing into the far right-hand lane, vehicles turning left beside you or turning right from opposite have right of way

53.11 General Handling of a Double Road Train

Double road trains handle differently from other heavy vehicles, especially on slippery surfaces where they spin or skid more easily.

- ✓ Wheels are more likely to spin when starting on slippery pavement
- ✓ A double road train is more likely to skid on level roads, grades, snow or wet pavement
- ✓ Always drive safely and defensively to anticipate and avoid hazards
- ✓ Any delay in correcting a threatening situation can result in an accident

53.12 Braking a Double Road Train

Although more wheels give greater braking capacity in theory, more axles and articulations make it harder to brake evenly in practice.

- ✓ More axles/articulations make it harder to stop tractor and trailers evenly and simultaneously
- ✓ Avoid abrupt braking or prolonged brake application to keep braking efficiency
- ✓ Constantly monitor traffic, adjust speed, and leave enough space ahead
- ✓ Check mirrors each time you brake to see how the semi-trailers react

53.13 Safe Following Distance Method

Professional drivers determine following distance in seconds based on vehicle length, allowing one second per three metres.

- ✓ Divide the vehicle length in metres by three to get the interval in seconds
- ✓ A 24 m double road train requires an 8-second interval (24 / 3 = 8)
- ✓ Pick a roadside reference point and count 'one thousand and one...' until the interval
- ✓ If you reach the reference point too soon, you are following too closely

53.14 Effects of Wheel Lock-Up

Locking different wheels of a double road train produces different dangerous outcomes, so preventing lock-up is critical.

- ✓ If the tractor's front wheels lock, you cannot steer properly
- ✓ If the tractor's back wheels lock, the vehicle could jackknife
- ✓ If the second semi-trailer's wheels lock, it may begin fishtailing
- ✓ Keep the brake system in good order and distribute load properly to avoid lock-up

53.15 Retarders and ABS

Retarders act only on drive wheels; on slippery roads some types can cause drive wheels to lock up and jackknife the vehicle. Most tractors and semi-trailers have ABS for greater stability, better steering control, and shorter braking distances, but you must stay alert to take control.

- ✓ Retarders act only on the drive wheels and can cause lockup and jackknifing on slippery roads
- ✓ ABS provides greater stability, better steering control and generally shorter braking distances
- ✓ Check mirrors each time you brake to see how the semi-trailers react

53.16 Passing and Avoiding Obstacles

A pup semi-trailer can overturn if you steer sharply to avoid an obstacle. Reduce risk with hard tires, proper suspension, axle and fifth wheel adjustment. Also scan the road ahead, reduce speed, change lanes early, and avoid turning the steering wheel more than necessary or sharply.

- ✓ Steering sharply to avoid an obstacle risks overturning the pup semi-trailer
- ✓ Reduce risk with hard tires and proper suspension, axle placement and fifth wheel adjustment
- ✓ Avoid turning the steering wheel more than necessary or sharply when manoeuvring around obstacles
- ✓ Scan the road ahead, reduce speed, and change lanes early when detecting a hazard

53.17 Being Passed by Another Vehicle

Longer vehicles need more time and distance to overtake, but other drivers often misjudge this and pull back in too soon. To help, reduce speed and stay in the right-hand lane without edging onto the shoulder. On wet roads stay out of ruts to avoid splashing passing vehicles.

- ✓ Reduce speed and stay in the right-hand lane to make it easier for others to pass
- ✓ Do not edge over onto the shoulder while being passed
- ✓ On wet roads, stay out of ruts to avoid splashing water onto passing vehicles

53.18 Passing Another Vehicle

Pass only where road signs allow and obey speed limits. Ensure you can overtake safely, check no one is overtaking you, ensure enough accelerating power, and allow enough space behind before returning to the right lane.

- ✓ Pass only where road signs allow it and obey the speed limits
- ✓ Ensure your vehicle has enough accelerating power to pass
- ✓ After overtaking, allow enough space behind you before pulling back into the right lane

53.19 Driving Straight and Risk of Fishtailing

Bumpy roads, high winds or abrupt steering can make the second semi-trailer weave back and forth (fishtailing), which can escalate to overturning.

- ✓ Fishtailing can be triggered by bumpy roads, high winds or abrupt steering turns
- ✓ Fishtailing may increase gradually until the second semi-trailer overturns
- ✓ Fishtailing may be hard to detect immediately, reducing reaction time
- ✓ Stay focused on the road and check mirrors regularly to maintain control

CHAPTER 54

Chapter 10 – Horsepower and Speed

54.1 LCV Speed and Following Distance Limits

Due to the large size and stability concerns of LCVs, specific speed and following distance rules are mandated to protect all road users and allow safe stopping.

- ✓ Must travel at a maximum speed of 90 km/h
- ✓ Must maintain at least 150 m from any road vehicle ahead, except when passing
- ✓ Should maintain even greater distance when weather or road conditions require

54.2 Minimum Tractor Horsepower Requirement

To maintain reasonable speeds especially on uphill grades, LCV tractors must meet a minimum power-to-weight ratio set by regulation.

- ✓ Tractor must have a minimum of 1 HP per 180 kg of total loaded mass
- ✓ This equals 375 HP for a combination with total loaded mass of 67,500 kg

CHAPTER 55

Roadside Inspections

55.1 Purpose and Scope of Roadside Inspections

Peace officers may stop heavy vehicle drivers for roadside inspections to ensure road safety, remove vehicles with major defects, verify noted defects, and confirm regulatory compliance. Officers can check documents, information accuracy, compliance, and vehicle condition.

- ✓ A peace officer may check the presence and accuracy of the circle check report and relevant defect lists on board
- ✓ Officers verify regulatory compliance (e.g., operating despite a major defect) and inspect the vehicle's condition
- ✓ Roadside inspections aim to remove vehicles with major defects from the road

CHAPTER 56

How to Recover From a Skid

56.1 Recovering From Different Skid Causes

If overbraking caused the skid, let up on the brake pedal so wheels turn again and tires grip. If rapid downshifting caused it, press down on the clutch and use the brake as needed. If overaccelerating caused it, slowly release the accelerator, changing gears as needed to keep wheels from spinning.

- ✓ Overbraking skid: let up on the brake pedal to restore traction
- ✓ Downshifting skid: press down on the clutch, use brake as needed
- ✓ Overaccelerating skid: slowly release the accelerator
- ✓ Once control is regained, shift into the appropriate gear

56.2 Maintaining Steering Control in a Skid

When the rear end veers left or right, turn the steering wheel in the same direction the vehicle is skidding to pull it back into line, then countersteer as the vehicle straightens. If the rear skids left, steer left then correct right; if the rear skids right, steer right then correct left.

- ✓ Turn the steering wheel in the same direction the rear of the vehicle is skidding
- ✓ When the vehicle is almost back in line, turn the wheel the opposite way to straighten front wheels
- ✓ Rear skidding left: steer left first, then right to straighten
- ✓ Rear skidding right: steer right first, then left to straighten

56.3 Determining the Cause of a Skid

When defensive driving fails to prevent a skid, the first thing to do is determine its cause—overbraking, rapid downshifting, or overaccelerating—so you can apply the correct recovery technique.

- ✓ First determine the cause of the skid before reacting
- ✓ Recovery technique depends on the cause of the skid

CHAPTER 57

Chapter 10 - Horsepower, Speed and Driving Conditions for LCVs

57.1 Speed Limit and Following Distance for LCVs

Due to the large size and stability considerations of LCVs, specific speed and distance rules apply to protect all road users.

- ✓ Maximum speed for an LCV is 90 km/h
- ✓ Must maintain a distance of at least 150 m from any road vehicle ahead, except when passing
- ✓ Maintain even greater distance when weather or road conditions require

57.2 Requirements Respecting Driving Days and Hours

LCV drivers face restrictions on when they may drive, including holidays and peak traffic periods in major cities.

- ✓ Prohibited from driving on December 26 or statutory holidays
- ✓ Prohibited from travelling on roads where LCVs are not authorized
- ✓ In Québec city: no highway driving Mon-Fri from 6:30-9:00 a.m. and 3:30-6:00 p.m.
- ✓ On the island of Montréal: no highway driving Mon-Fri from 5:30-9:30 a.m. and 3:00-7:00 p.m.

57.3 Weather Conditions and Winter Rules for LCVs

LCV drivers must only operate under clear conditions and clean roadways, with extra rules during winter months.

- ✓ Visibility must be clear for a distance of 500 m or more
- ✓ The roadway must be free of snow and ice
- ✓ Additional winter rules apply from December 1 to February 29

57.4 Minimum Horsepower Requirement

To maintain reasonable speed, especially uphill, the tractor must have adequate horsepower relative to loaded mass.

- ✓ Tractor must have a minimum of 1 HP per 180 kg of total loaded mass
- ✓ This represents 375 HP for a combination with a total loaded mass of 67,500 kg

57.5 Transportation of Dangerous Substances in LCVs

LCVs are restricted from carrying dangerous substances in placard-requiring quantities.

- ✓ Transportation of dangerous substances is prohibited in an LCV if the quantity requires display of safety mark placards

CHAPTER 58

Chapter 12 – Inspections During Your Trip

58.1 Mandatory Brake Test Inspections

Certain inspections are mandatory during a trip. Drivers must stop in areas designated by the VÉRIFICATION road sign to test their brakes and perform a braking system inspection as done during the circle check. This check takes only a few minutes and can be done from the cab.

- ✓ Stop in areas designated by the brake test road sign to test brakes
- ✓ Perform a braking system inspection as done during the circle check
- ✓ The brake check can be carried out from the cab in a few minutes

58.2 Wheel Temperature and Hub Checks

During a trip, check wheel temperature to confirm adequate brake adjustment and no risk of losing a wheel. Look for lubricant near wheel hubs, and check for intense heat, smoke, or burnt smell. Lubricant traces may mean a damaged hub ring seal or a wheel bearing about to slip out of the cup.

- ✓ Check wheel temperature to verify brake adjustment and wheel security
- ✓ Ensure no traces of lubricant near wheel hubs
- ✓ Check for intense heat, smoke, or burnt smell from wheels
- ✓ Lubricant near a hub may indicate a damaged seal or failing wheel bearing

58.3 Overheating Wheel Diagnosis

If one wheel produces more heat than others, the wheel bearing may be faulty or the brake misadjusted. Wait for the wheel to cool before doing a thorough check to determine the cause and ensure you can continue safely.

- ✓ A hotter wheel indicates a possible faulty bearing or misadjusted brake
- ✓ Wait for the wheel to cool before checking thoroughly
- ✓ Confirm safety before continuing

58.4 Re-tightening Recently Changed Wheels

If a wheel has recently been changed, check its tightness after travelling between 80 and 160 km. Wheels should preferably be tightened by a mechanic in accordance with the manufacturer's standards.

- ✓ Check tightness of a recently changed wheel after 80 to 160 km of travel
- ✓ Wheels should preferably be tightened by a mechanic per manufacturer standards

CHAPTER 59

Progressive Shifting and Limiting Speed (Chapter 3)

59.1 Progressive Shifting Method

Progressive shifting is better suited to modern engines than revving to maximum RPM. You bring engine speed almost up to minimum torque when shifting through the first 3–4 gears, and for higher gears increase RPM to at or slightly above minimum torque. It reduces shift time and reaches cruising speed faster.

- ✓ Do NOT rev to maximum RPM before shifting (old method)
- ✓ Bring engine near minimum torque for first 3-4 gears
- ✓ Increase RPM to at/slightly above minimum torque for higher gears
- ✓ Reduces time to reach cruising speed and saves fuel

59.2 Limiting Speed for Fuel Savings

The biggest fuel savings occur on highways. Staying at 90 km/h or under minimizes wear on engine, tires and brakes and saves fuel. Reducing cruising speed from 105 km/h to 90 km/h cuts fuel consumption by an average of 10%.

- ✓ Stay at 90 km/h or under to save fuel and reduce wear
- ✓ Reducing from 105 to 90 km/h cuts fuel use by ~10%
- ✓ Extra driving time added is minimal

CHAPTER 60

4 - Driver Controls

60.1 Accelerator Working Order

Check the accelerator's working order. With the vehicle stationary (parking brake engaged), engine running, transmission in neutral, press the accelerator (not to maximum rpm), release it, and confirm the engine returns to idle by watching the tachometer (or listening if none).

- ✓ Defect 4.A (major): The engine does not return to idle after the accelerator is released
- ✓ Defect 4.1 (minor): The engine does not accelerate or return to idle in a normal manner when released

60.2 Clutch Control (Manual Transmission)

Covers vehicles with manual (standard) transmission. Check clutch working order: engage parking brake, put transmission in neutral, press clutch and start engine, shift into gear, release parking brake, let vehicle move forward by delicately and completely releasing the clutch, then press clutch and brake to stop, shift to neutral, apply parking brake. Any gear slip not correctable by adjustment represents wear affecting proper working order.

- ✓ Defect 4.1 (minor): The clutch mechanism is not in proper working order
- ✓ Uncompensated gear slip indicates wear that can hamper proper working order

60.3 Horn Working Order

Check the working order of the horn by activating it in the driver's compartment. The mandatory inspection only covers working order, not the physical aspect or mounting of horns. If equipped with two horns, at least one must be checked.

- ✓ Defect 4.2 (minor): The horn is not working
- ✓ If the vehicle has two horns, at least one must be checked; anomalies affecting solidity should be reported

CHAPTER 61

For a Thorough and Effective Inspection / Tips and Recommendations

61.1 Purpose and Minimum Standard of the Circle Check

The circle check meets the minimum standards in the Regulation respecting safety standards for road vehicles. Its goal is to prevent a vehicle with defects that may endanger road users from being operated. The suggested 10-step method lets you completely circle the vehicle; it is not mandatory but helps meet obligations efficiently.

- ✓ The circle check meets the minimum standards set out in the Regulation respecting safety standards for road vehicles
- ✓ No specific method is mandatory, but the method used must allow all required inspections to be done effectively

61.2 Choosing a Safe Location and Vehicle Stability

Park on flat, safe ground to perform the circle check and watch nearby traffic if close to a roadway. Apply the parking brake to the entire vehicle from the start. During inspection it may be necessary to release the parking brake on vehicles with air suspension or air brakes to allow air intake, but always ensure the vehicle remains immobile even on flat ground.

- ✓ Choose a flat, safe location and apply the parking brake to the entire vehicle before starting
- ✓ When releasing the parking brake to allow air intake, ensure the vehicle remains immobile

61.3 Three Support Points and Special Attention Items

Always use three support points when climbing onto or off the vehicle and avoid climbing on tires or parts not intended for that purpose. Pay special attention to air leaks (brakes, suspension, tires) and fluid leaks on the ground, around wheel hubs, or on tanks, which indicate defects with potential major consequences such as flat tires, wheel loss, brake failure or suspension breakage.

- ✓ Always use three support points to climb onto or off the vehicle
- ✓ Watch for air leaks and fluid leaks (oil, grease, fuel) that signal major potential defects
- ✓ Inform the vehicle owner or operator of any anomalies detected, even outside the mandatory checks

CHAPTER 62

Chapter 1 - Spring Thaw Restrictions

62.1 Reason for Spring Thaw Load Restrictions

During the spring thaw, road resistance decreases by 40% and roads are especially vulnerable to heavy vehicle weight. A truck's impact during thaw equals several trucks in normal conditions, so stricter load limits are enforced to prevent serious road damage.

- ✓ Road resistance decreases by about 40% during spring thaw
- ✓ A single overloaded truck can cause serious road damage during thaw
- ✓ Stricter load limits are enforced during the spring thaw period

62.2 Spring Thaw Period and Zones

The load restriction period is usually March to May, adjustable by weather. Québec is divided into three zones: Zone 1 (southern Québec to Rivière-du-Loup), Zone 2 (north of Zone 1 including Saguenay, Gaspésie, Côte-Nord), and Zone 3 (north of Zone 2 including Abitibi, Chibougamau-Chapais). Consult Transport Québec for load limits.

- ✓ Load restriction period is usually March to May, adjustable by weather
- ✓ Québec is divided into three spring thaw zones
- ✓ Load limits are based on vehicle configuration and axle type per the Vehicle Load and Size Limits Regulation

CHAPTER 63

For a Thorough and Effective Inspection

63.1 Purpose and Minimum Standard of the Circle Check

The circle check meets the minimum standards of the Regulation respecting safety standards for road vehicles. Its goal is to prevent a vehicle with defects that may endanger road users from being put into operation. The suggested safe 10-step method lets you completely circle the vehicle; it is not mandatory but helps meet obligations.

- ✓ The circle check must be thorough and well understood
- ✓ The suggested 10-step method is not mandatory; another equally effective method may be used

CHAPTER 64

Special Rules for Certain Types of Cargo

64.1 Logs Securement

A log is a felled and clean-boled tree trunk or section, whether or not stripped of bark, and includes utility poles and roundwood construction poles. Because tree-trunk logs are cylindrical and tapered, proper securement requires a combination of tiedowns and blocking systems such as posts and bunks.

- ✓ Logs require a combination of tiedowns and blocking systems (posts and bunks)
- ✓ The term log includes utility poles and roundwood construction poles

64.2 Dressed Lumber Securement

Bundles of dressed lumber are usually stacked and secured by tiedowns spanning the top. Stacking raises the centre of gravity and reduces tiedown effectiveness because uniform tension is difficult. The Regulation prescribes special standards for bundles stacked more than one layer high.

- ✓ Special securement standards apply to dressed lumber stacked more than one layer high
- ✓ Stacking bundles raises the centre of gravity and reduces tiedown effectiveness

64.3 Metal Coils and Paper Rolls

Metal coils are heavy cylindrical objects requiring effective immobilization devices and a minimum number of tiedowns per coil, whether loaded vertically or horizontally. Paper rolls are heavy but fragile cylindrical objects usually transported in vans/containers, with special rules also for flatbed transport.

- ✓ Metal coils require immobilization devices and a minimum number of tiedowns for each coil
- ✓ Paper rolls usually transported inside a van or intermodal container
- ✓ Special standards apply for paper rolls on flatbed vehicles with no sides

64.4 Concrete Pipes and Containers

Concrete pipes are cylindrical with a high friction coefficient; large-diameter pipes may go one per vehicle while small-diameter pipes may be braced and stacked, and must be secured against shifting or rolling. Intermodal and roll-on/roll-off containers have special securement standards; intermodal containers use integrated locking devices.

- ✓ Concrete pipes must be secured to prevent shifting or rolling
- ✓ Intermodal containers are secured to chassis/flatbed via integrated locking devices
- ✓ Roll-on/roll-off containers are secured at front and rear on specially adapted vehicles

64.5 Vehicles Transported as Cargo

Vehicles carry moving parts (tires, suspension) allowing free vertical movement, so special securement systems are required for vehicles both 4,500 kg or less and greater than 4,500 kg. Flattened/crushed vehicles have dislocated parts that can dislodge, and this category over 4,500 kg includes tracked machinery.

- ✓ Transporting vehicles as cargo requires special securement systems due to free vertical movement of parts
- ✓ Special standards apply to flattened/crushed vehicles because components can dislodge
- ✓ The over-4,500 kg category includes tracked machinery or equipment

64.6 Boulders and Bulk Cargo

Boulder securement rules concern boulders over 5,000 kg or over 2 m^3; boulders over 100 kg and under 5,000 kg may also be secured under the same provisions. Bulk cargo covers aggregates, liquids, gases and granular products, with special standards for covering bulk in open-top receptacles.

- ✓ Boulder rules apply to those above 5,000 kg or above 2 m^3
- ✓ Boulders above 100 kg and below 5,000 kg may use the same provisions
- ✓ Special standards apply for covering bulk cargo carried in totally or partially open receptacles

CHAPTER 65

Mandatory Stops at Inspection Stations

65.1 Vehicles Required to Stop at Inspection Stations

You must stop at an inspection station when its lights are flashing if driving: a vehicle with GVWR of 4,500 kg or more designed primarily for transporting goods or permanently attached equipment; a tow truck or tool vehicle; or a combination of road vehicles where at least one has GVWR of 4,500 kg or more.

- ✓ Stop at inspection stations with flashing lights if GVWR is 4,500 kg or more
- ✓ Tow trucks, tool vehicles and qualifying vehicle combinations must stop

65.2 Inspection Station Exceptions

Certain exceptions apply, particularly for trucks with a net weight of 4,000 kg or less registered as a passenger vehicle under vehicle registration regulations, or for road vehicles used for recreational purposes.

- ✓ Trucks 4,000 kg net or less registered as passenger vehicles are exempt
- ✓ Recreational-use road vehicles are exempt from mandatory stops

CHAPTER 66

Speed

66.1 Effects of Speed on Driving

Speeding and reckless driving are major causes of fatal accidents involving heavy vehicle drivers. Drivers must obey both minimum and maximum speed limits or face penalties.

- ✓ As speed increases, your field of vision shrinks like driving through a narrow tunnel
- ✓ Speeding increases reaction-time distance and braking distance
- ✓ Speeding reduces your ability to make evasive manoeuvres
- ✓ Drivers must obey both minimum and maximum speed limits or face penalties

66.2 Effects of Speeding on Driving

Speeding and reckless driving are major causes of fatal accidents involving heavy vehicle drivers. Drivers must obey minimum and maximum speed limits or face penalties. Speeding increases stress and produces several dangerous effects on driving ability.

- ✓ Drivers must obey both minimum and maximum speed limits or face penalties
- ✓ As you speed up, your field of vision shrinks, becoming like a narrow tunnel
- ✓ Speeding increases the distance travelled during reaction time and increases braking distance
- ✓ Speeding declines your ability to make evasive maneuvers

66.3 Driving Responsibly in Traffic

Always bear in mind you are driving a heavy vehicle and drive responsibly at all times, especially in slow city traffic where other users may become aggressive.

- ✓ In slow city traffic, remain calm even when in a hurry
- ✓ Be extra careful, patient and use common sense since some road users may behave recklessly

CHAPTER 67

Brakes / Hydraulic Brake Controls (Chapter 3)

67.1 Three Brake System Components

All heavy vehicle brake systems, regardless of type (hydraulic or air), include three key brake functions.

- ✓ Service brake reduces speed using the brake pedal
- ✓ Parking brake keeps the vehicle stationary when parked
- ✓ Emergency brake stops the vehicle if service brake fails or trailer breakaway occurs

67.2 Hydraulic Brake Pedal Warning Signs

The brake pedal operates the service brake system. An abnormally low brake pedal is a serious warning signal indicating a problem that requires immediate repair.

- ✓ Abnormally low brake pedal is a serious warning signal
- ✓ Pump the pedal rapidly to temporarily increase braking pressure
- ✓ Have brakes repaired right away

67.3 Dual Circuit Brake System (Hydraulic)

Vehicles have a dual circuit brake system so braking is still possible if one hydraulic circuit fails, but requires harder pedal pressure and results in longer braking distance since only some wheels are braked.

- ✓ Dual circuit allows braking even if one circuit fails
- ✓ Requires harder pedal pressure with a failed circuit
- ✓ Braking distance may be longer
- ✓ Repair brakes before using the vehicle again

67.4 Power Brakes

Power brakes require little pedal pressure, but if the engine stalls you must apply much greater pressure. Driving is prohibited if the power brake system is not working properly.

- ✓ Power brakes need little pedal pressure normally
- ✓ Stalled engine requires much greater pedal pressure
- ✓ Prohibited to drive with a defective power brake system

67.5 Hydraulic Brake Warning Lights

The service brake pressure light and parking brake light indicate the status of the hydraulic and parking brake systems.

- ✓ Service brake pressure light comes on at start-up; if it stays on, hydraulic system may be defective
- ✓ Parking brake light indicates the parking brake is on

CHAPTER 68

Braking Distance / How to Bring Your Vehicle to a Stop

68.1 Speed and braking distance basics

The faster you drive, the less time to react and the greater the braking distance. Road conditions change quickly and the distance travelled in one second can make the difference between stopping safely and having an accident.

- ✓ Higher speed means less reaction time and greater braking distance
- ✓ One second of travel distance can be the difference between stopping safely and a crash

68.2 Load weight and braking

Load weight affects braking distance. Brake systems are designed for cargo up to the manufacturer's gross vehicle weight rating (GVWR). Doubling load weight with the same brake pressure means a greater stopping distance. Overloading past the GVWR requires braking power beyond normal capacity — brakes are not designed for the excess, and overheating drums/linings can further increase stopping distance.

- ✓ Brakes are designed for loads up to the manufacturer's GVWR
- ✓ Double the weight requires roughly double the braking power
- ✓ Overloading beyond GVWR can exceed brake capacity and cause overheating and loss of efficiency

68.3 Speed's impact on stopping distance

Speed has a much greater impact on stopping distance than load weight. Doubling your speed quadruples the stopping distance at the same brake pressure. Slowing just a few km/h greatly reduces stopping distance.

- ✓ Doubling speed quadruples stopping distance
- ✓ Speed affects stopping distance more than load weight
- ✓ Slowing a few km/h greatly reduces stopping distance

68.4 Perception and reaction time

The estimated time lag between seeing a danger and the brakes beginning to slow the vehicle is about two seconds. You must factor this delay in to brake safely.

- ✓ Estimated perception plus reaction time lag is about two seconds
- ✓ Factor in this two-second delay when judging safe braking

68.5 Road conditions and traction

Road/pavement conditions are beyond your control and can reduce traction needed for braking. The only sure way to stop within normal braking distance is to reduce speed. Braking distance is at least doubled on ice vs dry pavement: at 60 km/h about 45 m (140 ft) on dry vs 80 m (260 ft) on icy pavement. Slow to below the posted limit and avoid abrupt braking.

- ✓ Reduce speed when traction is poor — it's the only way to stop within normal distance
- ✓ Braking distance is at least doubled on ice vs dry pavement
- ✓ At 60 km/h stopping takes ~45 m on dry pavement and ~80 m on icy pavement

68.6 Using gears and brakes to stop

Use gears both to speed up and slow down so engine compression helps slow the vehicle and keeps you in the right gear to accelerate again. To slow or stop quickly, combine downshifting with regular brakes (or supplemental brakes where permitted) to reduce brake strain. Once stopped for a while, shift to neutral.

- ✓ Use downshifting and brakes in combination to reduce strain on the brakes
- ✓ Engine compression from gears helps slow the vehicle
- ✓ Shift to neutral when stopped for a while

68.7 Avoiding abrupt stops

Ensure enough space to stop to protect passengers/cargo. Abrupt braking creates strong forward momentum that can cause loss of control, skidding and severe accidents. Adjust speed, maintain safe distance, look ahead/sides/mirrors, and anticipate stops.

- ✓ Adjust speed and maintain a safe distance (counting seconds)
- ✓ Look ahead, to the sides and in mirrors to stay aware
- ✓ Anticipate where and when you will need to stop to avoid abrupt braking

CHAPTER 69

How to Recover from a Skid

69.1 Recovering Based on Skid Cause

First determine the skid cause. If caused by overbraking, let up on the brake pedal so wheels turn and grip again. If caused by rapid downshifting, press down on the clutch and use the brake as needed. If caused by overaccelerating, slowly release the accelerator. Change gears as needed considering engine compression and supplemental brakes.

- ✓ Overbraking skid: let up on the brake pedal to let wheels turn and grip
- ✓ Rapid downshifting skid: press down on the clutch
- ✓ Overaccelerating skid: slowly release the accelerator
- ✓ Shift into the appropriate gear once control is recovered

69.2 Maintain Steering Control During a Skid

When the rear end veers left or right, turn the steering wheel in the SAME direction the vehicle is skidding to pull it back into line. As the vehicle nears alignment, turn the wheel the opposite way until the front wheels are straight.

- ✓ Turn the steering wheel in the same direction the vehicle is skidding
- ✓ Rear skidding left: steer left, then correct right when nearly in line
- ✓ Rear skidding right: steer right, then correct left when nearly in line

CHAPTER 70

Loads Overhanging the Rear of the Vehicle

70.1 Marking Rear Overhanging Loads

Loads or equipment overhanging the rear of the vehicle must be marked with a red flag or reflecting panel, and lit at night, with a permit required for large overhangs.

- ✓ Place a red flag or reflecting panel at the rear of any load overhanging by more than one metre
- ✓ At night, install a red light visible from at least 150 metres to the rear and sides
- ✓ If the overhang exceeds two metres, obtain a special travel permit and comply with its special rules

70.2 Rear Overhang Marking Rules

Loads or equipment overhanging the rear of the vehicle require warning markers and, if excessive, a special permit. These rules alert other road users to the extended load.

- ✓ Place a red flag or reflecting panel on any load overhanging the rear by more than one metre
- ✓ At night, install a red light visible from at least 150 metres to the rear and sides
- ✓ If the overhang exceeds two metres, obtain a special travel permit and follow its rules

CHAPTER 71

Skidding, Overturning and Jackknifing

71.1 Common Accidents and Their Causes

The most common accidents with road trains are skidding, overturning and jackknifing, usually occurring when the centre of gravity is too high or too low, or when the road is wet or snow-covered. On dry pavement, skidding usually occurs with a very high centre of gravity.

- ✓ The most common accidents are skidding, overturning and jackknifing
- ✓ These occur when the centre of gravity is too high or too low, or when the road is wet or snowy
- ✓ On dry pavement, skidding usually occurs when the centre of gravity is very high

71.2 Conditions for Overturning and Jackknifing

The danger of overturning is greatest in a curve or during high winds. Jackknifing usually results from braking abruptly on a wet or snow-covered surface with a fairly low centre of gravity. Be alert and reduce speed to prevent these accidents.

- ✓ The danger of overturning is greatest in a curve or during high winds
- ✓ Jackknifing usually results from braking abruptly on wet or snow-covered roads with a low centre of gravity
- ✓ The best prevention is being alert to risky situations and reducing your speed

71.3 Potential Skidding Situations

Skidding, overturning and jackknifing are usually due to driving too fast, momentary distractions, steering errors, or braking abruptly. Miscalculating exit ramp space can cause a skid or overturn. When one wheel skids onto the shoulder it can send the vehicle into the ditch.

- ✓ These accidents are usually due to driving too fast, distractions, steering errors, or abrupt braking
- ✓ One wheel skidding onto the shoulder can send the vehicle into the ditch
- ✓ Stay well within your lane and ensure no wheels cross onto the shoulder

71.4 Tips to Prevent Jackknifing

Jackknifing usually occurs when reducing speed while negotiating a curve or turning. Consider articulation points and adjust speed to road conditions (wind, visibility, traction). When the jackknife angle exceeds 15°, it is the point of no return where regaining control is almost impossible.

- ✓ Jackknifing usually occurs when reducing speed while negotiating a curve or turning
- ✓ Adjust speed to road conditions considering wind, visibility and tire traction
- ✓ When the jackknife angle exceeds 15°, it is the point of no return and control is almost impossible to regain
- ✓ The best prevention is defensive driving: obey speed limits and treat other road users courteously

71.5 Tire Inflation and Brake Adjustment

Improper tire inflation causes accidents. An empty double road train with over-inflated tires can jackknife if braking abruptly, especially on a hot day after long driving. Under-inflated tires can cause loss of control. Improperly adjusted brakes can also cause jackknifing.

- ✓ An empty double road train with over-inflated tires can jackknife when braking abruptly
- ✓ Under-inflated tires (slow leak or fully deflated) can cause loss of control
- ✓ Improperly adjusted brakes can cause you to jackknife

71.6 Common Accident Types and Their Causes

Skidding, overturning and jackknifing are the most common road train accidents, linked to centre of gravity height and road surface conditions.

- ✓ Occur when centre of gravity is too high or too low, or when road is wet or snow-covered
- ✓ On dry pavement, skidding usually occurs with a very high centre of gravity
- ✓ Overturning danger is greatest in curves or during high winds
- ✓ Jackknifing usually results from abrupt braking on wet/snow surfaces with a fairly low centre of gravity
- ✓ Best prevention is to be alert for risky situations and reduce speed

71.7 Potential Skidding, Overturning and Jackknifing Situations

These accidents typically arise from speed, distraction, steering errors and abrupt braking, and from tire and brake problems.

- ✓ Usual causes: driving too fast, distractions, steering errors, or braking abruptly
- ✓ One wheel skidding onto the shoulder can send the vehicle into the ditch — keep all wheels in the lane
- ✓ Over-inflated tires on an empty double road train can jackknife under abrupt braking
- ✓ Under-inflated tires (slow leak, flat) can cause loss of control
- ✓ Improperly adjusted brakes can cause jackknifing

CHAPTER 72

Chapter 10 – Requirements Respecting Driving Days, Hours, and Conditions

72.1 Weather Condition Restrictions for LCVs

For safety, LCVs may only operate when visibility and road surface conditions meet minimum standards, with extra winter rules.

- ✓ May only operate where visibility is clear for 500 m or more
- ✓ May only operate where the roadway is free of snow and ice
- ✓ Additional winter rules apply from December 1 to February 29

72.2 Self-Evaluation Key Facts for LCVs

Key testable facts summarized in the self-evaluation exercises confirm the core LCV rules candidates must know.

- ✓ A special travel permit is required to drive an LCV (a Class 1 licence alone is not enough)
- ✓ The authorized maximum total loaded mass for an LCV is 67,500 kg
- ✓ Maximum authorized speed for an LCV driver is 90 km/h
- ✓ LCVs cannot operate during slippery/snow and ice road conditions

72.3 Prohibited LCV Driving Days and Hours

LCV operation is prohibited on certain days and during peak commuter hours in major cities to reduce congestion and risk.

- ✓ Prohibited from driving on December 26 or statutory holidays
- ✓ Prohibited from travelling on roads where LCVs are not authorized
- ✓ Prohibited on highways Mon-Fri 6:30 a.m.–9:00 a.m. and 3:30 p.m.–6:00 p.m. in the city of Québec
- ✓ Prohibited on highways Mon-Fri 5:30 a.m.–9:30 a.m. and 3:00 p.m.–7:00 p.m. on the island of Montréal

72.4 Transportation of Dangerous Substances in LCVs

LCVs are restricted from carrying larger quantities of dangerous substances that require placarding.

- ✓ Prohibited from transporting dangerous substances if the quantity requires display of safety mark placards

CHAPTER 73

5 - Steering

73.1 Power Steering Working Order

With the engine running, check the power steering by turning the steering wheel side to side to move the wheels. Some vehicles may need to move forward slightly to check. A steering wheel difficult to turn (mostly when stopped) may indicate power steering is not working.

- ✓ Defect 5.B (major): The power steering is not working
- ✓ A steering wheel hard to turn when stopped may signal power steering failure

73.2 Steering Column Solidity

Check the solidity of the steering column by trying to move the steering wheel in all directions from the driver's compartment.

- ✓ Defect 5.A (major): The steering column moves from its normal position with danger of separation
- ✓ Defect 5.1 (minor): The steering column moves in relation to its normal position

73.3 Power Steering and Column Operation

With the engine running, turn the steering wheel side to side to move the wheels and check power steering operation. Try to move the steering column and steering wheel in all directions to check solidity and adjustment locking.

- ✓ Major defect (5.B): the power steering is not working (a hard-to-turn wheel when stopped is a sign)
- ✓ Major defect (5.A): the steering column/wheel moves from its normal position with danger of separation
- ✓ Minor defect (5.1): the steering column moves from normal position, or an adjustable steering wheel does not remain locked in the selected position

73.4 Steering Wheel Adjustment and Solidity

Check the adjustment and solidity of the steering wheel by trying to move it in all directions. If the position is adjustable, ensure it remains locked in the selected position.

- ✓ Defect 5.A (major): The steering wheel moves from normal position due to improper mounting on the column, with danger of separation
- ✓ Defect 5.1 (minor): The adjustable steering wheel does not remain locked in the selected position

73.5 Power Steering Fluid and Belt

Check the power steering pump reservoir fluid level via the gauge/marks. If opening the reservoir, clean around the opening, replace the seal, and close tightly. Also inspect the power steering pump belt if accessible, though most heavy vehicles no longer have belt-driven pumps.

- ✓ Minor defect (5.2): fluid level is below minimum or above maximum prescribed by the manufacturer
- ✓ Minor defect (5.3): the power steering pump belt is cut; if cut enough to hamper power steering operation it becomes a major defect

73.6 Power Steering Pump Reservoir Fluid Level

Check the power steering fluid level in the engine compartment by viewing the gauge or marks on the reservoir. If the reservoir must be opened, clean around the opening, reposition any seal, and close the cover tightly.

- ✓ Defect 5.2 (minor): The fluid level is lower than the minimum or higher than the maximum prescribed by the manufacturer
- ✓ Check the fluid level using the gauge or marks; take precautions if opening the reservoir

73.7 Power Steering Pump Belt

Check the condition of the power steering belt in the engine compartment if accessible. Most heavy vehicles no longer use belt-driven power steering pumps.

- ✓ Defect 5.3 (minor): The power steering pump belt is cut
- ✓ If the belt is cut enough to hamper power steering working order, it becomes a major defect

CHAPTER 74

Chapter 1 - Highway Carrier Monitoring

74.1 Roadside Inspection Requirements

Heavy vehicle drivers may be subject to a roadside inspection, must stop and cooperate with the peace officer. Inspections may cover driver's licence, vehicle registration, register of owners/operators, transport permits, bills of lading, leasing contracts, driving/on-duty/off-duty hours, circle checks, mechanical condition, weight and size, IFTA registration, load securement, dangerous substances and traffic compliance.

- ✓ Drivers must stop and cooperate during a roadside inspection
- ✓ Inspections cover licence, registration, hours, circle checks and mechanical condition
- ✓ Load securement and dangerous substance compliance may be inspected

74.2 SAAQ and Contrôle Routier Québec Mandate

The SAAQ ensures vehicles carrying passengers or goods comply with regulations, supporting road safety, infrastructure protection and fair competition. Contrôle routier Québec ensures operators comply with the Highway Safety Code, Transport Act, and the Act respecting owners, operators and drivers of heavy vehicles.

- ✓ SAAQ ensures compliance for road safety, infrastructure and fair competition
- ✓ Contrôle routier Québec enforces the Highway Safety Code and Transport Act
- ✓ The Act respecting owners, operators and drivers of heavy vehicles governs carrier activities

CHAPTER 75

Braking Distance and Bringing Vehicle to a Stop

75.1 Avoiding Abrupt Stops

Abrupt braking with a heavy vehicle creates strong forward momentum that can cause loss of control and skidding. Avoid abrupt stops by adjusting speed to traffic, maintaining safe following distance, scanning ahead/sides/mirrors, and anticipating stops.

- ✓ Adjust speed to traffic and maintain safe following distance
- ✓ Look ahead, to the sides and in mirrors to stay aware of conditions
- ✓ Anticipate where and when you will need to stop
- ✓ Abrupt braking can send a heavy vehicle into a skid

75.2 Weight of Load and Braking

Load weight affects braking distance. Brake systems are designed for cargo up to the manufacturer's gross vehicle weight rating (GVWR). Doubling the load with the same brake pressure greatly increases stopping distance.

- ✓ Brakes are designed effective up to the manufacturer's GVWR
- ✓ Doubling the load with the same brake pressure increases stopping distance
- ✓ Overloaded vehicles need more braking power than brakes can provide, and can overheat

75.3 Vehicle Speed and Stopping Distance

Speed has a much greater impact on stopping distance than load weight. Doubling your speed quadruples your stopping distance at the same brake pressure. Slowing just a few km/h greatly reduces stopping distance.

- ✓ Doubling your speed quadruples your stopping distance
- ✓ Speed affects stopping distance more than load weight
- ✓ Slowing down a few km/h greatly reduces stopping distance

75.4 Perception and Reaction Time

The estimated time lag between when a driver sees a danger and when the brakes begin slowing the vehicle is two seconds. This delay must be factored in to brake safely.

- ✓ Estimated perception and reaction lag is about two seconds
- ✓ You must factor in this two-second delay when braking

75.5 Road Conditions and Traction

Road/pavement conditions are beyond your control and reduce traction. The only way to ensure stopping within normal distance is to reduce speed. Braking distance is at least doubled on icy pavement versus dry. At 60 km/h, stopping takes about 45 m (140 ft) on dry pavement and 80 m (260 ft) on ice.

- ✓ Braking distance is at least doubled on icy pavement compared to dry
- ✓ At 60 km/h stopping takes about 45 m on dry pavement, 80 m on ice
- ✓ Reduce speed—below the posted limit—and avoid braking abruptly on poor surfaces

75.6 Braking Distance Fundamentals

Good drivers control speed at all times. The faster you drive, the less time to react and the greater the braking distance. Road conditions change quickly, and the distance travelled in one second can make the difference between stopping safely and having an accident.

- ✓ Faster speed means less reaction time and greater braking distance
- ✓ Distance travelled in one second can be the difference between stopping and crashing

75.7 How to Bring Your Vehicle to a Stop

Use gears to slow down as well as speed up, letting engine compression help. To slow or stop quickly, combine downshifting with braking, which reduces brake strain. Use regular brakes or, where permitted, the supplemental brake system. Once stopped for a while, shift to neutral.

- ✓ Use engine compression (downshifting) to help slow the vehicle
- ✓ Combine downshifting and braking to reduce strain on brakes
- ✓ Shift to neutral when stopped for a while
- ✓ Use supplemental brake system where permitted

CHAPTER 76

What Causes Jackknifing?

76.1 Understanding and Preventing Jackknifing

Jackknifing occurs when the forward thrust of the semi-trailer pushes the tractor left or right. The tractor and semi-trailer are said to have jackknifed when positioned at an angle of less than 90°. If you notice a loss of traction, quickly let up on the accelerator or brake pedal to avoid jackknifing.

- ✓ Jackknifing occurs when the semi-trailer's forward thrust pushes the tractor sideways
- ✓ A jackknife is defined as an angle of less than 90° between tractor and trailer
- ✓ If losing traction, quickly let up on the accelerator or brake pedal as applicable

76.2 Understanding and Avoiding Jackknifing

Jackknifing occurs when the forward thrust of the semi-trailer pushes the tractor to the left or right. A tractor and semi-trailer are jackknifed if positioned at an angle of less than 90°. To avoid it, quickly let up on the accelerator or brake pedal when losing traction.

- ✓ Jackknifing occurs when semi-trailer thrust pushes the tractor sideways
- ✓ A jackknife is defined as an angle of less than 90° between tractor and trailer
- ✓ When losing traction, quickly let up on the accelerator or brake pedal

CHAPTER 77

Chapter 12 - What Is the Circle Check and Is It Mandatory

77.1 Purpose and Definition of the Circle Check

The circle check is a sight and sound inspection of accessible vehicle components. It helps detect defects early and prevents unsafe operation.

- ✓ The circle check is a sight and sound inspection of certain accessible components
- ✓ It helps detect defects early and inform the operator/owner for repairs
- ✓ It helps avoid operating a vehicle whose condition might cause an accident or breakdown

77.2 Mandatory Nature of the Circle Check

The circle check is legally required for subject vehicles and must be documented with a report before driving.

- ✓ Circle check is mandatory for all vehicles subject to this inspection
- ✓ A driver cannot drive and an operator cannot let a vehicle be driven if the check was not carried out within the regulatory time frame
- ✓ A circle check report must be filled out for each circle check carried out

77.3 Goals of the Circle Check Chapter

Mechanical factors cause a notable share of heavy vehicle accidents; the circle check aims to inform, prepare, and raise awareness among drivers.

- ✓ Mechanical factors are an issue in over 10% of accidents involving heavy vehicles
- ✓ Most defects can be detected during an adequate sight and sound inspection before setting out
- ✓ The driver or a person designated by the operator is responsible for carrying out the check

CHAPTER 78

Tips and Recommendations

78.1 Three Support Points and Special Attention Items

Always use three support points when climbing onto or off the vehicle, and avoid climbing on tires or unintended parts. Watch for air leaks from brakes, suspension or tires, and fluid leaks on the ground, around wheel hubs, or on tanks (oil, grease, fuel) — these can indicate major consequences such as flat tire, wheel loss, brake malfunction, or suspension break.

- ✓ Always use three support points to climb onto or off the vehicle
- ✓ Pay special attention to air leaks and fluid leaks, which may indicate serious defects
- ✓ Do not climb on tires or parts not intended for that purpose

78.2 Choose a Safe Location and Ensure Vehicle Stability

Park on flat, safe ground to conduct the circle check, watching nearby traffic. Apply the parking brake to the entire vehicle before starting. When releasing the parking brake is necessary (e.g. air suspension or air brake vehicles to allow air intake), ensure the vehicle remains immobile even on flat ground.

- ✓ Choose a flat, safe location and apply the parking brake to the entire vehicle before inspection
- ✓ When the parking brake must be released, ensure the vehicle stays immobile even on flat ground

78.3 Overall Vehicle Condition and Use of Tools

The inspection is primarily a sight and sound check of accessible parts, but remain attentive to general condition (engine operation, fluid levels, component solidity, part wear, cargo securement). Inform the owner/operator of any anomalies. For additional checks requiring touching parts, proceed cautiously and use gloves and tools such as a pressure gauge, hammer, flashlight, clean rags, and a tool to open the power steering reservoir.

- ✓ Report any detected anomalies to the vehicle's owner or operator
- ✓ Use appropriate tools (pressure gauge, hammer, flashlight, rags) and gloves when performing additional touch checks
- ✓ Remain attentive to parts not subject to the mandatory circle check

CHAPTER 79

Chapter 12 – Roadside Inspections

79.1 Peace Officer Roadside Inspections

Heavy vehicle drivers may be stopped by peace officers during roadside inspections aimed at ensuring road safety by removing vehicles with major defects. Officers check defects, driver compliance with regulations, and vehicle condition.

- ✓ Officers verify the presence of the circle check report and lists of defects on board
- ✓ Officers verify the accuracy of the circle check report information
- ✓ Officers check compliance, e.g., operating despite a major defect
- ✓ Officers check the overall condition of the vehicle

CHAPTER 80

Suggested 10-Step Method

80.1 Coordinated Inspection Sequence

The suggested method applies to a combination of a semi-trailer with a sliding bogie, equipped with air brakes, hitched to a tractor truck. Use a coordinated sequence: top to bottom, left to right, front to back. The 10 steps are: (1) approach and preliminary cab check, (2) front of tractor, (3) left side of tractor, (4) centre left of semi-trailer, (5) rear left of semi-trailer, (6) rear of semi-trailer, (7) rear right of semi-trailer, (8) centre right of semi-trailer, (9) right side of tractor, (10) inside the cab. Elements in bold are mandatory; numbers in parentheses refer to the components table.

- ✓ Inspect systematically: top to bottom, left to right, front to back
- ✓ Follow the 10-step sequence around the entire combination and end inside the cab
- ✓ Keeping the circle check report and applicable defect list(s) on board the vehicle is mandatory

80.2 Step 1 - Approaching and Preliminary Cab Check

Observe the combination's general condition for indications of defects: a sagging vehicle (broken spring or air leak from air spring), nonparallel wheels (missing/broken spring suspension part), a displaced axle (abnormal axle/wheel displacement), and fluid traces on the ground (fuel or oil leak). Enter the cab on the driver's side, close the door, confirm the parking brake is engaged on both tractor and trailer, turn on low beams, parking/tail lights and right turn signal, check the driver's door operation, then get out and check for emergency equipment.

- ✓ Make sure the parking brake is engaged on both the tractor truck and the trailer
- ✓ A sagging vehicle may indicate a broken spring or air spring leak; nonparallel wheels indicate suspension damage
- ✓ Check the opening/closing of the driver's door (10.1) and presence of emergency equipment (7.1, 7.3)

80.3 Steps 2-3 - Front and Left Side of Tractor

At the front of the tractor, check low beams, parking lights and right turn signal (8.A, 8.B, 8.1), hood-mounted mirrors (11.3), and fixed body components (2.3). Under the hood on the driver's side, check power steering fluid level (5.2), power steering pump belt condition (5.3), visible side rails (2.A, 2.B, 2.1) and suspension (section 14). If equipped with hydraulic brakes, also check master cylinder reservoir fluid (18.1). Along the driver's side check tires/valves, wheels/fasteners, wheel bearing leaks and lubricant, mirror, body, suspension, side rail, exhaust, fuel tank and filler cap.

- ✓ Check power steering fluid level (5.2) and pump belt (5.3) under the hood
- ✓ If the vehicle has hydraulic brakes, also check the master cylinder reservoir fluid level (18.1)
- ✓ Check tires, wheels and fasteners, and wheel bearing leaks and lubricant level along the side

80.4 Steps 4-8 - Semi-Trailer Inspection

Inspect the coupling mechanism (fifth wheel), upper coupling plate and kingpin visible parts, and the fifth wheel jaws (use a flashlight if needed). Along the semi-trailer, check the body, side rails and cross members, spare wheel support and anchorages, sliding bogie side rail and locking pins, suspension, tires and valves, wheels and fasteners, and wheel bearing leaks/lubricant. At the rear, check tail lights, right turn signal, and licence plate light.

- ✓ Check the fifth wheel jaws, upper coupling plate and kingpin (1.A, 1.E, 1.F)
- ✓ Check the sliding bogie side rail and locking pins (2.A, 2.B, 2.C, 2.1, 2.2)
- ✓ Check the semi-trailer's tail lights, right turn signal and licence plate light (8.B, 8.1)

80.5 Step 9 - Right Side of Tractor and Turn Signal Check

On the passenger side, check parking lights, right turn signal, body, coupling mechanism, upper coupling plate and kingpin, side rails and cross members, suspension, tires and valves, wheels and fasteners, wheel bearing leaks, fuel tank and filler cap, exhaust, passenger door, and mirror. Under the hood, check visible side rails and suspension. Close and latch the hood (passenger side first, then driver side). Return to the cab, activate the left turn signal, climb down safely using three support points, and verify all turn signal lights.

- ✓ Latch the hood first on the passenger's side, then the driver's side
- ✓ Check turn signal lights on the front, rear of the tractor, and rear of the semi-trailer
- ✓ Check the passenger side door (10.A) and mirror (11.2, 11.3)

80.6 Step 10 - Inside the Cab

Adjust the driver's seat and check the seat (13.1) and seat belt (13.A). Turn the key to 'ON' and check the steering wheel and column (5.A, 5.1), horn (4.2), mirrors (11.2, 11.3), windshield (11.1), wipers (6.A, 6.1), washer system (6.2), defroster blowers/vents (3.1), side windows (11.1, 11.4), emergency equipment if stowed inside (section 7), and the braking system per the applicable section (17, 18 or 19).

- ✓ Check the driver's seat (13.1) and its seat belt (13.A)
- ✓ Check steering, horn, mirrors, windshield, wipers, washer and defroster with the key in the 'ON' position
- ✓ Check the braking system according to the specific instructions for its type (section 17, 18 or 19)

80.7 Coupling Mechanism and Fifth Wheel Inspection

At the rear of the tractor and between the truck and semi-trailer, check the coupling mechanism (fifth wheel example) (1.B–1.F, 1.1, 1.2), the upper coupling plate and kingpin visible parts (1.A, 1.F), and the fifth wheel jaws (use a flashlight for better visibility). Also check truck tail lights, right turn signal, and body. The appropriate components should be inspected for other types of coupling mechanisms.

- ✓ Inspect the fifth wheel, jaws, upper coupling plate and kingpin visible parts
- ✓ Use a flashlight to inspect the fifth wheel jaws for better visibility
- ✓ Inspect appropriate components for whatever coupling mechanism type is present

80.8 Inspection Sequence and Direction

The suggested method applies to a combination made up of a semi-trailer with a sliding bogie, air brakes, hitched to a tractor truck. Use a coordinated sequence: top to bottom, left to right, front to back. Elements listed in bold are mandatory to inspect. The 10 steps are: 1) approaching/preliminary cab check, 2) front of tractor, 3) left side of tractor, 4) centre left of semi-trailer, 5) rear left of semi-trailer, 6) rear of semi-trailer, 7) rear right of semi-trailer, 8) centre right of semi-trailer, 9) right side of tractor, 10) inside the cab.

- ✓ Inspect top to bottom, left to right, and front to back
- ✓ Keeping the circle check report and applicable list(s) of defects on board the vehicle is mandatory
- ✓ Adapt the method to the vehicle's braking, coupling, steering and emergency equipment

80.9 Steps 9-10 - Right Side of Tractor and Inside Cab

On the passenger side of the tractor check parking lights, right turn signal, body, coupling mechanism, side rails/cross members, suspension, tires/valves, wheels/fasteners, wheel bearing leaks, fuel tank and filler cap, exhaust, passenger door, and mirror. Close and latch the hood (passenger side first, then driver side). Inside the cab, adjust and check the driver's seat and seat belt, then turn key to ON and check steering wheel/column, horn, mirrors, windshield, wipers, washer, blowers/vents, side windows, emergency equipment, and the braking system per the applicable section.

- ✓ Latch the hood on the passenger's side first, then the driver's side
- ✓ Check driver's seat (13.1), seat belt (13.A), steering (5.A, 5.1), horn (4.2), windshield (11.1) and wipers (6.A, 6.1)
- ✓ Check the turn signals by activating the left turn signal and verifying front, tractor rear and semi-trailer rear signals

CHAPTER 81

Negotiating a Curve and Turning at an Intersection

81.1 Space Needs When Turning

When turning or negotiating a curve, the rear axles of the second semi-trailer tend to cross into the other lane, and wheelbase affects turning ease.

- ✓ The rear axles of the second semi-trailer tend to cross into the other lane when turning
- ✓ Amount of crossover depends on total length and fifth wheel/axle adjustment
- ✓ A B train is easier to turn due to its shorter wheelbase
- ✓ An A train has three pivot axes and a longer wheelbase, making it harder to turn
- ✓ Coordinate speed and direction to steer exactly where intended

81.2 Making Right Turns

Right turns are the hardest manoeuvre due to the risk of colliding with vehicles in the adjacent lane; prevent others from entering the space between the vehicle and the road edge.

- ✓ Keep the vehicle in the right lane and prevent road users from entering the gap on the right
- ✓ Look left, right, then left again before starting the turn
- ✓ Hold the front end close to the dividing line of the lane being entered
- ✓ Keep rear wheels off the sidewalk or shoulder
- ✓ Trespassing slightly into the next lane is prohibited but sometimes unavoidable — only when clear

81.3 Making Left Turns

Left turns require steering into the left lane and keeping close to the right-hand dividing line so rear wheels do not cross the centre line.

- ✓ Steer into the left lane and look left and right before turning
- ✓ Keep the front end close to the dividing line and edge to the right of the entered lane
- ✓ Ensure rear wheels do not cross over the centre line before completing the turn
- ✓ If trespassing into the far right lane, yield to vehicles turning left in a parallel lane or turning right from opposite direction (they have right of way)

81.4 Passing and Avoiding Obstacles

Sharp steering to avoid an obstacle can overturn the pup (second) semi-trailer; equipment choices and smooth driving reduce the risk.

- ✓ Sharp one-side steering to avoid obstacles risks overturning the pup semi-trailer
- ✓ Use hard tires and properly adjust suspension, axle placement and fifth wheel position
- ✓ Scan ahead, reduce speed and change lanes early when detecting a hazard
- ✓ Avoid turning the steering wheel more than necessary — more turning increases overturn/jackknife risk

81.5 Being Passed and Passing Other Vehicles

Because of its length, other drivers misjudge the time and space needed to pass a double road train; the driver should help them pass safely and pass others cautiously.

- ✓ To help others pass, reduce speed and stay in the right lane but not on the shoulder
- ✓ On wet roads, stay out of ruts to avoid splashing passing vehicles
- ✓ Pass only where road signs allow and obey speed limits
- ✓ Ensure enough accelerating power and clear space before passing, and allow space behind before returning to the right lane

CHAPTER 82

Inspections at the End of a Trip

82.1 Recommended End-of-Trip Inspection

Although not mandatory, inspecting a vehicle at the end of a trip is recommended. It lets you record defects or anomalies, provides repair information before the vehicle returns to the road, benefits the business, saves time and money, and improves safety.

- ✓ End-of-trip inspection is recommended but not mandatory
- ✓ Record defects and anomalies to inform repairs before the vehicle is taken back on the road

CHAPTER 83

Obligations

83.1 Circle Check Obligations

Drivers must do a sound and sight check of the vehicle's condition, record observations (major or minor defects) in the circle check report, keep the report up to date and in the vehicle, report mechanical defects and anomalies in writing, and ensure the vehicle has no major defects.

- ✓ Record major or minor defects in the circle check report and keep it in the vehicle
- ✓ Do not operate a vehicle that has major defects

83.2 Transportation of Passengers and Goods Obligations

Drivers must comply with the legal passenger limit, properly arrange and secure baggage/cargo/mail in designated bus compartments, properly secure truck loads, and obey dangerous substance regulations including the prohibition on driving through tunnels.

- ✓ Comply with legal passenger limits and properly secure cargo/baggage
- ✓ Obey dangerous substance rules including tunnel prohibitions

83.3 Driver's Licence Obligations

Drivers must inform the operator if their licence class or endorsements are modified, cancelled or suspended; comply with any peace officer who suspends their licence for exceeding driving/duty hours, invalid licence, or impairment; and hold only one driver's licence with the required class and endorsements.

- ✓ Inform the operator of any licence modification, cancellation or suspension
- ✓ Hold only one driver's licence with the required class and endorsements

83.4 Driving and Off-Duty Hours Records

Unless exempted, drivers must keep accurate off-duty and driving time logs in the vehicle for the previous 14 days, regardless of the cycle being followed.

- ✓ Keep accurate driving/off-duty logs for the previous 14 days
- ✓ Logs must be kept in the vehicle unless exempted

83.5 Vehicles Subject to the Heavy Vehicle Act

The Act respecting owners, operators and drivers of heavy vehicles applies regardless of licence class to: equipment transport vehicles with GVWR 4,500 kg or more; emergency vehicles GVWR 4,500 kg or more; combinations with at least one vehicle GVWR 4,500 kg or more; tow trucks (any GVWR); buses (any GVWR); and vehicles carrying dangerous substances requiring safety mark placards (any GVWR).

- ✓ Tow trucks and buses are subject to the Act regardless of GVWR
- ✓ Placarded dangerous substance vehicles are covered regardless of GVWR

83.6 Vehicle Registration and Equipment Obligations

Drivers must carry the registration certificate and proof of insurance. They must buckle up and not drive with a defective seat belt, use a flashing/rotating yellow light per permit conditions, mark outsized loads extending over one metre beyond the rear with a red flag/reflective panel (and red light at night), and keep safety equipment (warning triangle, reflectors, flares or lamps).

- ✓ Carry registration certificate and proof of insurance
- ✓ Mark outsized loads extending over one metre with red flag/panel and red light at night

83.7 Vehicle Size, Load and Peace Officer Obligations

Drivers must carry a special travel permit for outsized/overloaded vehicles and comply with its conditions. They must obey instructions from peace officers (police or carrier enforcement officers) during roadside inspections and facility audits.

- ✓ Carry and comply with special travel permit conditions for outsized/overloaded vehicles
- ✓ Obey instructions from peace officers and carrier enforcement officers

CHAPTER 84

Alcohol

84.1 Effects of Alcohol on Driving

Alcohol affects the brain and central nervous system, the body's decision-making and coordination centre. As blood alcohol concentration increases, your ability to drive is gradually diminished.

- ✓ Alcohol changes visual perception quality, alters judgment and increases reaction time
- ✓ Alcohol reduces resistance to fatigue and impairs coordination
- ✓ Alcohol increases self-confidence, leading to more risk-taking and dangerous driving

84.2 Legal Blood Alcohol Limit

Under the Criminal Code, the legal limit is 80 mg of alcohol per 100 ml of blood (0.08). Penalties for impaired driving are increasingly severe. Heavy vehicle drivers are subject to special rules on blood alcohol concentration.

- ✓ The Criminal Code legal limit is 0.08 (80 mg alcohol per 100 ml of blood)
- ✓ You can be arrested and convicted even below 0.08 if there is enough evidence your ability to drive was impaired
- ✓ Even below the legal limit, the ability to drive is diminished; heavy vehicle drivers have special BAC rules (see Chapter 1)

84.3 Effects of Alcohol on Driving Ability

Alcohol affects the brain and central nervous system, the body's decision-making and coordination centre. As blood alcohol concentration increases, driving ability is progressively diminished. Alcohol also creates false self-confidence leading to more risk-taking.

- ✓ Alcohol changes visual perception quality, alters judgment and increases reaction time
- ✓ Alcohol reduces resistance to fatigue and impairs coordination
- ✓ Alcohol creates false self-confidence leading to more risk-taking and dangerous driving

84.4 Legal Blood Alcohol Limits

Under the Criminal Code the legal limit is 80 mg of alcohol per 100 ml of blood (0.08). Penalties for impaired driving are increasingly severe. Even below the legal limit your ability to drive is diminished, and you can be arrested and convicted below 0.08 if evidence shows impairment. Heavy vehicle drivers face special BAC rules (see Chapter 1).

- ✓ The Criminal Code legal limit is 80 mg of alcohol per 100 ml of blood (0.08)
- ✓ You can be arrested and convicted even below 0.08 if there is enough evidence your ability was impaired
- ✓ Driving ability is diminished even below the legal limit
- ✓ Heavy vehicle drivers are subject to special BAC rules while driving

84.5 Only Time Eliminates Alcohol

Folk remedies to reduce or eliminate alcohol effects are ineffective. Eating may delay absorption but does not prevent intoxication. Only time can eliminate alcohol from the bloodstream.

- ✓ The liver eliminates about 15 mg of alcohol per hour, equivalent to one beer, one glass of wine or one serving of spirits
- ✓ Eating slows absorption but does not prevent intoxication
- ✓ Only time can eliminate alcohol from the bloodstream and mitigate its effects on driving

84.6 Elimination of Alcohol from the Body

Folk remedies to reduce alcohol effects are ineffective. Eating may delay absorption but does not prevent intoxication. Regardless of BAC, the liver eliminates about 15 mg of alcohol per hour—equal to one beer, one glass of wine or one serving of spirits. Only time can eliminate alcohol from the bloodstream.

- ✓ Eating may slow alcohol absorption but does not prevent intoxication
- ✓ The liver eliminates about 15 mg of alcohol per hour on average
- ✓ 15 mg is equivalent to one beer, one glass of wine or one serving of spirits
- ✓ Only time can eliminate alcohol from the bloodstream

CHAPTER 85

The Most Popular Brake System (Chapter 4: Pneumatic/Air Brake Systems)

85.1 Primary and Secondary Circuits

Air brake systems are made up of a compressed air supply circuit plus two independent circuits: the primary circuit (P or 1) and the secondary circuit (S or 2). They activate service brakes on all wheels and work independently so if one fails the other continues to operate.

- ✓ Primary circuit labelled P or 1
- ✓ Secondary circuit labelled S or 2
- ✓ Both circuits activate service brakes on all wheels
- ✓ Circuits work independently; if one fails, the other operates normally
- ✓ Installation may differ between vehicles

85.2 Advantages of Air Brakes

Air brakes are used on almost all modern heavy vehicles. They are more powerful than hydraulic systems, proven reliable, and easy to connect to other vehicles and air-powered equipment.

- ✓ Usually more powerful than hydraulic systems
- ✓ Proven reliability
- ✓ Easy to connect to trailers and air-powered equipment
- ✓ Compressed air also used for suspension

CHAPTER 86

Backing Up

86.1 Checking before backing up

Backing up is difficult because you usually cannot see directly behind using mirrors alone, especially into small spaces. Back up as seldom as possible. Before backing, look at the surrounding area layout; if needed, get out to assess road surface, note stationary objects, and anticipate pedestrian/vehicle traffic. Check for overhead and side obstacles.

- ✓ Back up as seldom as possible; get out to assess the layout if necessary
- ✓ Check the road surface, stationary objects and potential pedestrian/vehicle traffic
- ✓ Check for overhead and side obstacles before backing

86.2 Back up slowly and immediately

Begin backing immediately after checking so the situation doesn't change. Backing slowly is key to safety — it makes correcting steering errors, estimating distances and stopping easier. Correct steering errors immediately.

- ✓ Begin backing immediately after checking, before conditions change
- ✓ Back up slowly to allow error correction and distance estimation
- ✓ Correct steering errors immediately

86.3 Steering direction when backing

With a bus or straight-body truck, turn the steering wheel toward the side you're steering the rear (right to back right, left to back left) until the reference points line up. With a trailer hitched to a tractor, the manoeuvre is opposite — turn the wheel in the direction OPPOSITE to where you want the trailer to go.

- ✓ Bus/straight-body truck: steer toward the side you want the rear to go
- ✓ Tractor-trailer: steer in the opposite direction from where you want the trailer to go
- ✓ Back right: first turn wheel left so trailer goes right, then turn right so tractor follows

86.4 Things to Check Before Backing Up

Backing up is difficult because mirrors cannot show what is directly behind. Back up as seldom as possible. Before backing, take a moment to study the surrounding layout, and if necessary get out to check the road surface, note stationary objects, anticipate traffic, and check for overhead/side obstacles.

- ✓ Back up as seldom as possible with a heavy vehicle
- ✓ Study the surrounding area layout before backing; get out to check if necessary
- ✓ Check road surface condition and note stationary objects
- ✓ Check overhead and side obstacles before backing

86.5 Back Up Slowly

After checking the layout, begin backing immediately before conditions change. Backing slowly makes it easier to correct steering errors, estimate distances, and stop if needed. Correct steering errors immediately.

- ✓ Begin backing immediately after checking the layout before it changes
- ✓ Back up slowly to correct errors, estimate distance and stop safely
- ✓ Correct steering errors immediately

86.6 How to Back Up - Reference Points

Backing requires two visual reference points: the rear corner of your vehicle on the side you are backing toward, and the farthest rear edge of the loading dock/space. With a bus or straight-body truck, turn the wheel toward the side you steer the rear until the points line up. With a tractor-trailer, turn the wheel in the OPPOSITE direction from where you want the trailer to go.

- ✓ Use two reference points: the rear corner of your vehicle and the far rear edge of the space
- ✓ Bus/straight-body truck: turn the wheel toward the side you want the rear to go
- ✓ Tractor-trailer: turn the wheel opposite to the direction you want the trailer to go
- ✓ Maintain visual contact with both reference points and line them up

86.7 Trailer visibility while backing up

After dark, backing up so you obstruct the oncoming lane can make your trailer or semi-trailer hard to see. Use hazard lights, do not turn on high-beam headlights (they could blind others), and when possible plan to arrive on the same side as the loading dock.

- ✓ Use hazard lights when backing at night
- ✓ Do not use high beams — they can blind oncoming drivers
- ✓ Plan to arrive on the same side as the loading dock when possible

86.8 Backing toward the driver's side

Whenever possible, back up steering the rear toward the driver's (left) side because it lets you see part of the area behind through the left window and mirror. With a bus or straight-body truck you can use the left mirror more easily but must regularly check the right mirror and side window.

- ✓ Back toward the driver's (left) side when possible for better visibility
- ✓ Regularly check the right mirror and side window with a bus or straight-body truck

86.9 Using a helper when backing

It is always better to have a reliable helper, especially when backing toward the right. Ensure the helper knows what to do and which signals to use, and watches the space behind and to the sides. The helper must remain visible to you at all times — stand behind and to the left when backing left, behind and to the right when backing right.

- ✓ The helper must stay visible to the driver at all times
- ✓ Backing left: helper stands behind and to the left; backing right: behind and to the right
- ✓ Choose a reliable helper who understands the signals

86.10 Reference points for backing up

Backing requires picking two visual reference points: the rear corner of your vehicle on the side you're backing toward, and the farthest rear edge of the loading dock/parking space. Maintain visual contact and line them up together.

- ✓ Use two reference points: your rear corner and the far rear edge of the target space
- ✓ Maintain visual contact and line the two points up side by side

86.11 Backing up in a straight line

To back a semi-trailer straight, if it veers left or right, turn the wheel to steer the tractor in that same direction to correct. If the trailer veers too far out of line, stop, pull forward to realign the tractor-trailer, then resume backing.

- ✓ Correct a veering trailer by steering the tractor in the direction the trailer veered
- ✓ If badly out of line, pull forward to realign before backing again

86.12 Trailer Visibility While Backing at Night

After dark, when backing so that you obstruct the oncoming lane, your trailer may be hard to see. Increase visibility using hazard lights, do not use high beams (they blind others), and when possible arrange to arrive on the same side as the loading dock.

- ✓ Use hazard lights when backing up at night
- ✓ Do not turn on high beams while backing—they blind other drivers
- ✓ When possible, plan to arrive on the same side as the loading dock

86.13 Backing Toward the Driver's Side

Back up steering the rear toward the driver's (left) side when possible because it lets you see part of the area behind through the left window and mirror. With buses/straight-body trucks you are better positioned to use the left mirror but must regularly check the right mirror and side window.

- ✓ Back toward the driver's (left) side when possible for better visibility
- ✓ Use the left side window and left rearview mirror if the tractor-trailer angle allows
- ✓ Regularly check the right mirror and side window during the manoeuvre

86.14 Using a Helper When Backing

It is always better to have a reliable helper, especially when backing to the right. Ensure the helper understands the signals to use. When backing left, the helper should stand behind off to the left; when backing right, behind off to the right so they maintain visual contact.

- ✓ Always better to use a helper, especially when backing toward the right
- ✓ The helper must remain visible to the driver at all times
- ✓ When backing left, helper stands behind off to the left; backing right, off to the right
- ✓ Agree on signals with a reliable helper beforehand

86.15 Backing Up Toward the Right (Tractor-Trailer)

To back a tractor-trailer to the right: first turn the wheel LEFT so the semi-trailer backs toward the right while aiming to line up the reference points; then turn the wheel RIGHT so the tractor also backs right, continuing until points line up side by side.

- ✓ First turn the wheel left so the semi-trailer moves right
- ✓ Then turn the wheel right so the tractor follows the trailer
- ✓ Continue until the two reference points line up side by side

86.16 Backing Up Toward the Left (Tractor-Trailer)

To back a tractor-trailer to the left: first turn the wheel RIGHT so the semi-trailer backs toward the left while aiming to line up the reference points; then turn the wheel LEFT so the tractor also backs left, continuing until points line up.

- ✓ First turn the wheel right so the semi-trailer moves left
- ✓ Then turn the wheel left so the tractor follows the trailer
- ✓ Continue until the reference points line up side by side

86.17 Backing Up in a Straight Line

When backing straight, if the trailer veers off, turn the wheel to steer the tractor in that same direction to correct. If the trailer veers too far out of line, stop, pull forward to realign, then begin backing again.

- ✓ If the trailer veers off, steer the tractor in that same direction to correct
- ✓ If the trailer veers too far, pull forward to realign then back up again

CHAPTER 87

Rules for Transporting Dangerous Substances

87.1 Training Requirements

Employers must ensure drivers of dangerous substances are trained for their duties, and issue a valid training certificate.

- ✓ Training must be directly related to duties and appropriate to the type of dangerous substances transported
- ✓ The employer must issue a training certificate specifying the areas trained, subjects covered and expiry date
- ✓ The certificate is valid for 36 months

87.2 Carrying the Training Certificate

Drivers must carry their training certificate, or be supervised by a certificate holder, whenever transporting dangerous substances.

- ✓ Carry the original or a copy of your training certificate at all times when transporting dangerous substances
- ✓ Alternatively, be under the direct supervision of a person carrying the original or a copy of his or her certificate

87.3 Shipping Document Handling

A copy of the shipping document must accompany dangerous substances to the point of delivery and be stored in a specified accessible location.

- ✓ The shipping document copy must remain with the dangerous substances up to the point of delivery
- ✓ If on board, store it in a protective jacket on the driver's side door or within easy reach
- ✓ If not in the vehicle, place it in a protective jacket on the driver's side door OR on the driver's seat/visible location for anyone entering from the driver's side

87.4 Labelling and Safety Marks

Dangerous substances must be labelled with prescribed safety marks, and drivers must verify classification, marking and placard provision before taking possession.

- ✓ Verify the substances have been classified before taking possession
- ✓ Verify the shipper affixed appropriate safety marks (label, placard or sign) on containers
- ✓ Placards must be placed on each end and each side of the vehicle
- ✓ No container of dangerous substances may be placed on or in front of a motor vehicle's front bumper

87.5 Applicable Regulations

Anyone handling or transporting dangerous substances on Québec public roads must comply with the Transportation of Dangerous Substances Regulation, which incorporates federal standards.

- ✓ Compliance is required from the manufacturing/distribution site to the delivery/unloading site
- ✓ The Regulation provides exemptions depending on type or quantity of substances
- ✓ It incorporates by reference Transport Canada's Transportation of Dangerous Goods Regulations

87.6 Classes of Dangerous Substances

Dangerous substances are grouped into nine classes with specific hazards and examples, each with prescribed placards.

- ✓ Class 1 Explosives (1.1 mass explosion e.g. TNT; 1.2 projection; 1.3 fire hazard e.g. fireworks; 1.4 no significant blast; 1.5 very insensitive with mass explosion; 1.6 extremely insensitive)
- ✓ Class 2 Gases (2.1 flammable e.g. propane; 2.2 non-flammable non-toxic e.g. nitrogen; 2.3 toxic e.g. carbon monoxide)
- ✓ Class 3 Flammable liquids with flash point at or below 60.5°C (e.g. gasoline, ethanol, kerosene, diesel)
- ✓ Class 4 Flammable solids/self-igniting/water-reactive; Class 5 Oxidizers and organic peroxides; Class 6 Toxic and infectious; Class 7 Radioactive; Class 8 Corrosive; Class 9 Miscellaneous

87.7 Class 1.4 Placard Exemptions and SQ Authorization

Class 1.4 explosives have quantity-based placard exemptions, and transporting certain explosives requires authorization from the Sûreté du Québec.

- ✓ Placards are not required for Class 1.4 if quantity is equal to or less than 1,000 kg
- ✓ Placards are not required for Class 1.4S regardless of quantity
- ✓ In Québec, a driver transporting explosives listed under the Act respecting explosives must obtain authorization from the Sûreté du Québec

87.8 Driver Training and Certificate

Employers must ensure drivers have training directly related to their duties and appropriate to the substances carried, and must issue a training certificate specifying the trained areas, subjects and expiry date.

- ✓ Training certificate is valid for 36 months
- ✓ Drivers must carry the original or a copy of their training certificate at all times when transporting dangerous substances
- ✓ Alternatively, the driver must be under direct supervision of a person carrying their own certificate original/copy

87.9 Regulations Governing Dangerous Substances

Anyone handling or transporting dangerous substances on Québec public roads must comply with the Transportation of Dangerous Substances Regulation from the manufacturing/distribution site to delivery/unloading. It incorporates by reference Transport Canada's Transportation of Dangerous Goods Regulations, with some exemptions by type or quantity.

- ✓ Compliance required from manufacturing/distribution site to delivery/unloading site
- ✓ Regulation incorporates Transport Canada's Transportation of Dangerous Goods Regulations by reference
- ✓ Exemptions may apply depending on the type or quantity of substances

87.10 Shipping Document Requirements

Anyone taking charge of a dangerous substances shipment must obtain a copy of the shipping document containing the required information; it must remain with the substances to the point of delivery.

- ✓ Shipping document must remain with the dangerous substances up to delivery
- ✓ On board: store it in a protective jacket on the driver's side door or within easy reach
- ✓ When not in the vehicle: place it in a protective jacket on the driver's side door OR on the driver's seat/ visible location for anyone entering from the driver's side

CHAPTER 88

6 - Windshield Wiper/Washer

88.1 Windshield Wipers

Requirements concerning wipers and washer apply at all times, not only in bad weather. Check presence, condition, and working order of wipers: check for presence, switch them on, and check blade effectiveness. Effective blades sweep the windshield to remove dirt and ensure sufficient visibility.

- ✓ Defect 6.A (major): The driver's side wiper is missing, not working, or does not sweep effectively
- ✓ Defect 6.1 (minor): The passenger's side wiper is missing, not working, or does not sweep effectively

88.2 Windshield Washer System

Check the washer system working order by switching it on and confirming it sprays washer fluid onto the windshield. An effective system sprays enough fluid to appropriate areas to provide sufficient visibility.

- ✓ Defect 6.2 (minor): The washer system does not clean the windshield effectively (e.g. nozzle blocked/misadjusted, little or no fluid sprays)
- ✓ Requirements apply at all times, not only in bad weather

CHAPTER 89

Inspecting a Pneumatic Brake System (Air Brake System)

89.1 In-Cab Air Brake Inspection Sequence

Make the vehicle stable, start the engine, release the parking brake, and check the low air pressure indicator(s) (19.A, 19.1). If not already on, pump the brake pedal to lower pressure until the light/buzzer turns on or the wigwag drops. If indicators are already on at start-up, ensure gauge pressure is at least 380 kPa (55 psi) when they turn off. Then check compressor performance (19.B) by holding the brake pedal down while idling and confirming the compressor reaches and maintains at least 620 kPa (90 psi).

- ✓ Release the parking brake and confirm low air pressure indicators activate below 380 kPa (55 psi)
- ✓ Confirm indicators turn off at 380 kPa (55 psi) or more
- ✓ Confirm the compressor reaches and maintains at least 620 kPa (90 psi) with the pedal held down

89.2 Pressure Regulator Cut-Out and Cut-In Testing

With the compressor working, let the engine idle (optionally about 1,000 rpm) and confirm the compressor switches off between 805 kPa (117 psi) and 945 kPa (137 psi) (19.3). Make sure air pressure is at maximum, turn off the engine, and check the brake system for leaks (19.C, 19.4) by pressing and holding the pedal while watching the gauge/listening. Restart the engine and slowly decrease pressure until the compressor switches back on before reaching 550 kPa (80 psi) (19.3).

- ✓ Compressor must cut out between 805 kPa (117 psi) and 945 kPa (137 psi)
- ✓ Compressor must cut back in before pressure falls to 550 kPa (80 psi)
- ✓ Check for leaks by holding the pedal down and watching the gauge or listening for audible leaks

89.3 Parking Brake, Steering, Clutch and Service Brake Road Checks

Apply the semi-trailer's parking brake, press the accelerator (without maxing RPM) and try to gently move forward to confirm it holds; then release. Repeat for the tractor's parking brake (apply tractor, release trailer, try to move, confirm it holds). Then check clutch (4.1), power steering (5.B) and service brakes (19.D) by releasing the parking brake, driving slightly forward, turning the wheel side to side to confirm free wheels and working steering, then stopping with clutch/service brakes. Check the accelerator (4.A, 4.1), engine exhaust for cab fume infiltration (16.A, 16.1), and brake lights (8.B, 8.1) if it can be done safely.

- ✓ Confirm each vehicle's parking brake keeps the combination stationary when trying to drive forward (19.5)
- ✓ Drive slightly forward and turn the wheel side to side to verify power steering and free-turning wheels
- ✓ Watch for exhaust odours that may indicate fumes leaking into the cab through the floorboard

89.4 In-Cab Air Brake Test Sequence

Make the vehicle stable, start the engine, release the parking brake, and check the low air pressure indicator(s) (19.A, 19.1). If not already on, pump the brake pedal to lower pressure until the light/buzzer turns on or the wigwag drops. If indicators are already on at start, do not lower pressure further, but ensure the gauge reads at least 380 kPa (55 psi) when indicators turn off. Then check compressor performance (19.B): with engine idling and compressor working, push the brake pedal fully down and hold, watch the gauge, and confirm the compressor reaches/maintains at least 620 kPa (90 psi).

- ✓ Ensure the pressure gauge reads at least 380 kPa (55 psi) when the low air pressure indicators turn off
- ✓ Confirm the compressor reaches and maintains at least 620 kPa (90 psi) with the pedal held down
- ✓ Release the parking brake before the in-cab air brake test to engage all circuits

89.5 Pressure Regulator and Leak Test Sequence

Check the pressure regulator cut-out (19.3): while the compressor works, let the engine idle and confirm the compressor switches off between 805 kPa (117 psi) and 945 kPa (137 psi); ~1,000 rpm speeds the rise. Ensure pressure is at maximum, turn off engine, and check for leaks (19.C, 19.4) by pressing/holding the pedal and watching the gauge or listening. Restart and check cut-in (19.3): slowly decrease pressure until the compressor switches back on and confirm it does so before reaching 550 kPa (80 psi).

- ✓ Compressor must cut out between 805 kPa (117 psi) and 945 kPa (137 psi)
- ✓ Compressor must cut in before pressure drops to 550 kPa (80 psi)
- ✓ Check for leaks after building maximum pressure and turning off the engine, holding the pedal down

89.6 Parking Brake, Service Brake, Steering and Clutch Test

Check the semi-trailer's parking brake (19.5): apply it, press the accelerator gently, try to move forward, and confirm it holds. Check the tractor's parking brake (19.5): apply tractor brake, release trailer brake, try to move forward, confirm it holds. Then check clutch (4.1), power steering (5.B) and service brakes (19.D): release tractor brake, drive slightly forward turning the wheel side to side to confirm free-turning wheels and power steering, then brake to stop. Check the accelerator (4.A, 4.1) in neutral with parking brake applied, the exhaust system for cab fume infiltration (16.A, 16.1), and brake lights of the combination if it can be done safely.

- ✓ Test both the semi-trailer's and the tractor's parking brakes separately for holding ability (19.5)
- ✓ Turn the steering wheel side to side while driving slowly to confirm free wheel movement and power steering operation
- ✓ Fill out and sign the circle check report and follow up on any detected defects

CHAPTER 90

Appendix – Driver's Licence Classes

90.1 Class 1 Licence Authorizations

A Class 1 licence authorizes driving combinations of vehicles: double-axle road tractors (net weight 4,500 kg+) or triple-axle road tractors hauling trailers/semi-trailers, and Class 3 trucks hauling qualifying trailers. Holders may drive all other vehicle categories except motorcycles.

- ✓ Class 1 covers double-axle road tractors (net weight 4,500 kg+) and triple-axle road tractors hauling one or more trailers/semi-trailers
- ✓ Class 1 covers Class 3 trucks hauling a trailer/semi-trailer of 4,500 kg+ (for permanent equipment) or 2,000 kg+ for other trailers
- ✓ A road tractor has no cargo space and is permanently equipped with a fifth wheel; Class 1 holders may drive all other categories except motorcycles

90.2 Class 3 Licence Authorizations

A Class 3 licence authorizes straight-body trucks: double-axle trucks (net weight 4,500 kg+) or any truck with three or more axles, and truck tractors (2 axles at 4,500 kg+, or 3+ axles) not hitched to a trailer/semi-trailer. It also covers hitched trailers under certain weight limits.

- ✓ Class 3 covers double-axle trucks of 4,500 kg+ net weight or any truck with three or more axles
- ✓ Class 3 covers a truck tractor (2 axles at 4,500 kg+ or 3+ axles) provided it is NOT hitched to a trailer or semi-trailer
- ✓ Trailers are covered if under 2,000 kg net, or 2,000–4,500 kg only when carrying permanently equipped machinery/fixtures

90.3 Licence Endorsements (F, M, T)

Endorsements may be added to Class 1, 2, and 3 licences. F certifies air brake operation, M certifies manual transmission operation, and T certifies operating a road train (double road train over 25 m requiring a special permit, Class 1 only).

- ✓ F endorsement certifies a Class 1/2/3 holder may drive a heavy vehicle with air brakes
- ✓ M endorsement certifies driving a heavy vehicle with a manual transmission
- ✓ T endorsement (Class 1 only) certifies driving a road train over 25 m requiring a special road train operating permit

90.4 Class 2 Licence Authorizations

A Class 2 licence authorizes driving a bus designed to carry more than 24 passengers, and a bus hitched to a trailer under 2,000 kg. Holders may drive all other categories except vehicle combinations (Class 1) and motorcycles.

- ✓ Class 2 authorizes driving a bus designed to carry more than 24 passengers, plus a bus hitched to a trailer under 2,000 kg
- ✓ Class 2 holders may not drive Class 1 combinations or motorcycles

CHAPTER 91

Chapter 1 - Mandatory Stops at Inspection Stations

91.1 When Stopping at Inspection Stations is Required

You must stop at an inspection station when its lights are flashing if driving: a vehicle with a GVWR of 4,500 kg or more designed for transporting goods or permanently-attached equipment; a tow truck or tool vehicle; or a combination of road vehicles where at least one has a GVWR of 4,500 kg or more.

- ✓ Stop when inspection station lights are flashing
- ✓ Applies to goods vehicles with GVWR of 4,500 kg or more
- ✓ Applies to tow trucks, tool vehicles, and combinations with at least one 4,500 kg unit

91.2 Inspection Station Exceptions

Certain exceptions apply, in particular trucks with a net weight of 4,000 kg or less registered as a passenger vehicle under vehicle registration regulations, or road vehicles used for recreational purposes.

- ✓ Trucks with net weight of 4,000 kg or less registered as passenger vehicles may be exempt
- ✓ Road vehicles used for recreational purposes may be exempt

CHAPTER 92

Brakes – Hydraulic Systems (Chapter 3)

92.1 Three Basic Brake System Components

All heavy vehicle brake systems, whatever the type, include a service brake (reduces speed via brake pedal), a parking brake (keeps vehicle stationary when parked), and an emergency brake (stops vehicle if service brake fails or a trailer breaks away).

- ✓ Service brake reduces speed using the brake pedal
- ✓ Parking brake holds vehicle stationary when parked
- ✓ Emergency brake stops vehicle if service brake fails or trailer breaks away

92.2 Brake Pedal Warning Signs (Hydraulic)

An abnormally low brake pedal is a serious warning signal. You can temporarily increase braking pressure by pumping rapidly and repeatedly, but the brakes must be repaired right away.

- ✓ Abnormally low pedal is a serious warning sign
- ✓ Pump rapidly to temporarily increase pressure
- ✓ Have brakes repaired immediately

92.3 Dual Circuit Hydraulic Brakes

Vehicles have a dual circuit brake system so braking is still possible if one hydraulic circuit fails, but you must press harder, only some wheels brake, and braking distance may increase. Repair before reusing the vehicle.

- ✓ Dual circuit allows braking if one circuit fails
- ✓ Requires harder pedal pressure; braking distance may be longer
- ✓ Must repair before using the vehicle again

92.4 Power Brakes

Power brakes require little pedal effort, but if the engine stalls you must apply much greater pressure. Driving is prohibited if the power brake system is not working properly.

- ✓ Power brakes require little pedal effort normally
- ✓ Engine stall requires much greater pedal pressure
- ✓ Driving is prohibited if power brakes malfunction

92.5 Hydraulic Brake Warning Lights

The service brake pressure light comes on at start-up to confirm the hydraulic system works; if it stays on the system may be defective. The parking brake light indicates the parking brake is on.

- ✓ Service brake pressure light staying on may mean a defective hydraulic system
- ✓ Parking brake light indicates the parking brake is engaged

CHAPTER 93

Chapter 12 - Vehicles Subject To and Exempt From the Circle Check

93.1 Vehicles Subject to the Circle Check

Certain heavy vehicles and combinations must undergo a circle check based on weight rating and vehicle type.

- ✓ Road vehicles with a GVWR of 4,500 kg or more are subject
- ✓ Combinations where at least one vehicle has a GVWR of 4,500 kg or more must have all vehicles inspected
- ✓ Buses, minibuses and tow trucks are subject regardless of GVWR
- ✓ Road vehicles under 4,500 kg GVWR transporting dangerous substances requiring safety marks are subject

93.2 Vehicles Exempt From the Circle Check

Specific vehicle categories, mainly tool, farm, emergency and personal-use vehicles, are exempt from circle check requirements.

- ✓ Tool vehicles (grader, wheel loader, back hoe) are exempt
- ✓ Heavy vehicles used for emergency service or disasters are exempt
- ✓ Farm tractors, farm machinery and farm trailers are exempt
- ✓ Heavy vehicles used by a natural person for personal, non-commercial purposes are exempt
- ✓ Straight-body trucks with two or three axles transporting unprocessed farm/forest/fishery products (driver/operator is producer) are exempt

CHAPTER 94

Self-Evaluation Exercises

94.1 Key Testable Facts from Self-Evaluation

Review confirms critical facts: for hitching the upper coupler plate must be slightly lower than the fifth wheel plate at pivot point; the heaviest semi-trailer goes to the tractor (not the lightest); braking abruptly on slippery roads causes jackknifing; and a right turn is the hardest (not easiest) manoeuvre.

- ✓ The upper coupler plate must be slightly lower than the fifth wheel plate at its pivot point for hitching
- ✓ The heaviest and longest semi-trailer is hitched to the tractor, not the lightest
- ✓ Braking abruptly on slippery roads can cause jackknifing
- ✓ A right turn is the hardest manoeuvre, not the easiest

94.2 Key Exam Facts (True/False Review)

Review points reinforcing critical testable facts on hitching, unhitching, load positioning, braking and turning.

- ✓ TRUE: The semi-trailer upper coupler plate must be slightly lower than the fifth wheel plate at the pivot point
- ✓ TRUE: To unhitch, move the tractor forward slightly to release the kingpin, stop, lower suspension, then drive forward slowly
- ✓ FALSE: The heaviest (not lightest) semi-trailer should be hitched to the tractor
- ✓ TRUE: Braking abruptly on slippery roads can cause jackknifing
- ✓ FALSE: A right turn is the HARDEST, not easiest, manoeuvre for a heavy vehicle

94.3 Key Review Concepts

The self-evaluation reinforces critical exam concepts about securement, inspection, dangerous substances training, tank baffles and emissions enforcement.

- ✓ Securement methods differ by load type — the same method cannot be used for any load
- ✓ Cargo must be checked during the trip even if properly secured at the start
- ✓ When transporting dangerous substances, the driver or accompanying person must carry the original or a copy of the training certificate
- ✓ Baffles reduce but do not eliminate liquid movement — the vehicle can still overturn
- ✓ A carrier enforcement officer can inspect a heavy vehicle showing excessive emissions and issue an offence report

94.4 Key review facts from exercises

Review of critical facts: looking far ahead is essential in all driving, not only on highways. An 18 m vehicle needs a 6-second following interval. Braking distance is doubled on ice, not a fixed 10% speed reduction for a 10% grade. Avoid braking in curves to prevent skidding. Do not pump/rapidly release air brakes for effective braking.

- ✓ Look far ahead in all conditions, not just on highways
- ✓ An 18 m heavy vehicle needs a 6-second following interval
- ✓ Avoid braking in curves to prevent skidding
- ✓ Do not rapidly press and release the air-brake pedal for effective braking

94.5 Key Exam Review Points

Review the true/false self-evaluation concepts: looking far ahead is essential on all roads not just highways; an 18 m vehicle needs a 6-second following interval; air brakes should not be pumped repeatedly; and you should avoid braking in curves to prevent skidding.

- ✓ An 18 m heavy vehicle needs a 6-second following interval
- ✓ Do not press and release air brakes rapidly—do not pump them
- ✓ Avoid braking while going around a curve to reduce skidding risk
- ✓ Looking far ahead is essential on all types of roads, not only highways

94.6 Key Exam Concept Confirmations

The self-evaluation reinforces core exam truths: securement methods vary by load type, cargo must be re-checked during a trip, certificates must be carried for dangerous substances, baffles do not prevent overturning, and officers can test emissions.

- ✓ Different loads require different securement methods; one method does not fit all
- ✓ Secured cargo must still be checked during the trip
- ✓ A dangerous-substances training certificate (original or copy) must be carried by the driver or accompanying person
- ✓ Baffles do not prevent side-to-side liquid displacement that can overturn a vehicle
- ✓ Carrier enforcement officers can inspect for excessive emissions and issue offence reports

CHAPTER 95

Chapter 11 – Driving and Off-Duty Time for Heavy Vehicle Drivers

95.1 Purpose of Driving and Rest Regulations

Rules on driving time, on-duty time and off-duty time exist to limit driver fatigue, which endangers the driver and other road users.

- ✓ Rules aim to ensure drivers get a minimum number of hours of rest before driving
- ✓ Rules establish maximum driving and on-duty time beyond which drivers must stop
- ✓ Standards are set in the Regulation respecting the hours of driving and rest of heavy vehicle drivers

95.2 Activity Report Recording Requirement

Since April 30, 2023, heavy vehicle drivers must record their working, driving, and rest hours in an activity report, with limited exceptions.

- ✓ Since April 30, 2023 drivers must record hours of work, driving and rest in an activity report
- ✓ Applies except in certain specified situations

CHAPTER 96

Chapter 12 – Inspections at the End of a Trip

96.1 Recommended End-of-Trip Inspection

Though not mandatory, inspecting a vehicle at the end of a trip is recommended. It allows recording defects or anomalies, providing information on repairs needed before returning the vehicle to the road, benefiting the business and improving safety.

- ✓ An end-of-trip inspection is recommended but not mandatory
- ✓ Record defects and anomalies to inform needed repairs
- ✓ This practice improves vehicle safety and saves time and money

CHAPTER 97

In the Event of an Accident

97.1 Responsibilities When Involved in an Accident

Under the Highway Safety Code, if involved in an accident you must remain at or immediately return to the scene, help any injured victim, contact the police, and provide any information required by the police officer at the scene.

- ✓ Remain at or immediately return to the accident scene
- ✓ Help injured victims, contact police, and provide required information

97.2 Assisting at an Accident Scene as a Witness

As a witness or first arrival, park about 30 m from the scene and turn on emergency lights. Contact police immediately or have someone do so. If anyone is injured, turn off the ignition of the involved vehicle. Set out flares or reflectors to warn other road users if possible, and assist the injured.

- ✓ Park about 30 m from the scene with emergency lights on
- ✓ Turn off the involved vehicle's ignition and warn others with flares/reflectors

97.3 Safety and First Aid at Accidents

On arriving at an accident and while remaining there, make sure you can provide assistance without endangering yourself or others. A first-aid training course provides practical knowledge, and keeping a first-aid kit in the vehicle at all times is recommended.

- ✓ Ensure you can help without endangering yourself or others
- ✓ Keep a first-aid kit in the vehicle at all times

CHAPTER 98

Controls and Components — Driver's Cab (Chapter 4)

98.1 Air Brake Pedal Operation

The brake pedal activates service brakes on all wheels including trailer/semi-trailer wheels. Pressing it allows compressed air from the service reservoirs to flow into the brake chambers. More pedal pressure means more air enters the chambers.

- ✓ Activates service brakes on all wheels including trailer
- ✓ Compressed air flows from service reservoirs to brake chambers
- ✓ More pressure = more air into chambers
- ✓ Pressure needed varies by vehicle and load

98.2 Semi-Trailer Hand Brake Control

The hand brake control applies service brakes only on the semi-trailer's wheels. It is attached to the steering column or dashboard and is sometimes used to check if the semi-trailer is properly hitched and if trailer service brakes work.

- ✓ Applies service brakes only on semi-trailer wheels
- ✓ Pull up (or push down on some models) to send air to trailer brake chambers
- ✓ Used to check hitching and trailer brake function
- ✓ NEVER use as a parking brake or as a service brake on the road

98.3 Dangers of Misusing the Hand Brake

Using the hand brake as a service brake on the road is less effective than the brake pedal. It distributes braking unequally, causing trailer brakes to overheat and become less effective, and can cause the vehicle to skid on ice.

- ✓ Less effective than the service brake for slowing
- ✓ Braking not equally distributed over all wheels
- ✓ Semi-trailer brakes overheat and lose effectiveness
- ✓ Can cause skidding on icy surfaces

98.4 Parking Brake Control (Yellow Knob)

The parking brake control is the yellow diamond-shaped knob on the dashboard. Pulling up releases air from the brake chambers, activating powerful springs that clamp the wheels. It holds tractor and semi-trailer stationary and must be pulled up before leaving the cab. Push down to release before driving.

- ✓ Yellow diamond-shaped knob on dashboard
- ✓ Pull UP to apply parking brake (releases air, springs clamp wheels)
- ✓ Push DOWN to release parking brake before driving
- ✓ Applies parking brakes on both tractor and semi-trailer
- ✓ Must pull up before getting out of the cab

98.5 Trailer Air Supply Control (Red Knob)

The octagonal-shaped red knob sends air to the trailer/semi-trailer service reservoirs. Pushing down opens a valve allowing air to flow to trailer brakes. Pulling up closes the valve, releasing air to apply the trailer parking brake. The red knob and yellow parking knob are always the same colour and shape in all vehicles.

- ✓ Octagonal red knob on dashboard
- ✓ Push DOWN to supply air to trailer/semi-trailer brakes
- ✓ Pull UP to apply trailer parking brake (for unhitching)
- ✓ Always same colour and shape in all vehicles

98.6 Air Pressure Gauge

The air pressure gauge measures air pressure in the service reservoirs. Because there are two independent circuits, there are two gauges (or one gauge with two needles), one per circuit. There is no gauge for the supply reservoir.

- ✓ Measures pressure in service reservoirs
- ✓ Two gauges (or one with two needles), one per circuit
- ✓ No gauge for the supply reservoir

CHAPTER 99

Changing Lanes

99.1 Lane change procedure

Before changing lanes, confirm the manoeuvre is allowed and safe. Check traffic density and speed of other vehicles, mirrors and blind spots for vehicles, cyclists or pedestrians. Signal, then check mirrors and blind spots once more to confirm it is still safe and that distances haven't changed. Steer slowly but steadily into the new lane so others can adjust.

- ✓ Confirm the lane change is legal and safe before starting
- ✓ Check mirrors and blind spots before AND after signalling
- ✓ Steer slowly but steadily into the other lane so drivers can adjust

99.2 Procedure for Changing Lanes

Before changing lanes, ensure the manoeuvre is allowed and safe. Check traffic volume and speed, mirrors and blind spots for vehicles, cyclists or pedestrians. Signal, then re-check mirrors and blind spots again to confirm gaps haven't changed. Steer slowly but steadily into the other lane.

- ✓ Confirm the manoeuvre is allowed and safe before starting
- ✓ Check mirrors and blind spots for vehicles, cyclists and pedestrians
- ✓ Signal, then check mirrors and blind spots once more before moving
- ✓ Steer slowly but steadily so other drivers can adjust

CHAPTER 100

How to Make an Emergency Stop

100.1 Emergency Stop Without ABS

Most heavy vehicles have ABS to prevent wheel lock. On a non-ABS vehicle, press the brake pedal as soon as needed, then gradually increase pressure as far as possible without locking wheels until you stop completely. If wheels lock, let up slightly, then resume pressure once wheels turn again.

- ✓ Press the brake pedal as soon as the situation requires
- ✓ Gradually increase pressure without locking the wheels until fully stopped
- ✓ If wheels lock, let up slightly then resume pressure once they turn again
- ✓ You must be able to maintain a straight line, stay on course and turn if needed

100.2 Recognizing Potential Hazards

Slow down when you notice hazards: a vehicle ahead braking for no apparent reason, vehicles making frequent stops (delivery trucks, taxis, buses), vehicles parked by the road, slippery roads, or blocked field of vision.

- ✓ Slow down for vehicles braking without apparent reason or making frequent stops
- ✓ Slow down for parked vehicles, slippery roads, or blocked vision
- ✓ Be extra cautious when braking with a loaded vehicle

CHAPTER 101

Special Rules for Transporting Dangerous Substances

101.1 Mandatory Stopping at Level Crossings

Vehicles requiring placards must stop at level crossings before proceeding, with signage recommended and specific exemptions.

- ✓ If the quantity requires placards, you must stop at a level crossing and proceed only when safe to cross
- ✓ Display a rear warning sign such as 'CE VEHICULE S'ARRÊTE AUX PASSAGES À NIVEAU' or 'ARRÊT AUX PASSAGES À NIVEAU'
- ✓ You may drive through without stopping only where road signs or traffic signals (EXEMPT) permit it

101.2 Accidental Spill Notification

If dangerous substances are lost, released, leaked or spilled beyond regulated limits, the person in possession must immediately notify specified parties.

- ✓ Immediately notify the local police, your employer, the shipper, and the vehicle owner or lessee
- ✓ Notify CANUTEC for infectious substances or discharge from a damaged gas cylinder (1-888-CAN-UTEC or *666 on a cell phone)
- ✓ Refer to the Regulation to determine discharge quantities that require notification

101.3 Cargo Inspection by a Peace Officer

Under the Highway Safety Code, drivers must comply with peace officer inspection requests and present required documents.

- ✓ Obey the officer's instructions and, if directed, pull over and stop the vehicle
- ✓ Show the officer all documents concerning the cargo
- ✓ Present the training certificate for transporting dangerous substances if requested

101.4 Dangerous Substances Prohibited on Road Trains

The Regulation prohibits transporting dangerous substances in certain long combination and double train configurations.

- ✓ Prohibited in a road train (LCV) more than 25 m long if the quantity requires safety mark placards under Part 4 of the TDG Regulations
- ✓ Prohibited in a double train tank truck unless it is a type B double train 25 m long or shorter

101.5 Tunnel Prohibitions

Transporting dangerous substances is prohibited in certain Québec tunnels under specific conditions.

- ✓ Prohibited in the signal-light-controlled approaches to the Melocheville tunnel and in the Louis-Hippolyte-La Fontaine, Ville-Marie, Viger and Joseph-Samson tunnels
- ✓ Prohibition applies when the quantity requires placards (unless carrying only Class 9)
- ✓ Applies when carrying Class 3 flammable liquid with total container capacity exceeding 30 L
- ✓ Applies when carrying Class 2.1, 2.3(2.1), 2.2(5.1) and 2.3(5.1) gases in more than two cylinders or a cylinder with water capacity exceeding 46 L, or equipment with naked flame/incandescent solid fuel

101.6 Transporting Liquefied Petroleum Gas Cylinders

Transporting LPG cylinders requires ventilation, bumper protection, and prohibits certain unsafe mounting positions.

- ✓ Do not transport gas cylinders in a vehicle unless the containment area has outside ventilation
- ✓ Any cylinder on the outer rear must be protected by extending the bumper beyond the cylinder with materials at least as strong as the bumper
- ✓ Never mount a cylinder on the roof or a door, in front of the front axle, or extending beyond either side of the vehicle

101.7 Transportation to the United States

Carriers taking dangerous substances to the US must register annually with USDOT for certain substance criteria and carry a training certificate.

- ✓ Register annually with USDOT if transporting Class 7 (any quantity), over 25 kg of Class 1.1/1.2/1.3 explosives, or over 1 L of products toxic when inhaled
- ✓ Drivers must carry an employer certificate showing appropriate training when transporting these substances to the US

101.8 Dangerous Substances Cargo Securement

Containers of dangerous substances and all other objects must be secured or immobilized using structures, blocking systems, bracings, dunnage/dunnage bags, shoring bars, tiedowns or combinations. Placement near the front bumper is prohibited.

- ✓ Secure containers using structures, blocking, bracing, dunnage, shoring bars, tiedowns or combinations
- ✓ No container of dangerous substances may be placed on or in front of the motor vehicle's front bumper

101.9 Tunnel Transport Prohibitions

Drivers are strictly prohibited from transporting dangerous substances through specific tunnels and the signal-light-controlled approaches to the Melocheville tunnel in certain situations.

- ✓ Prohibited tunnels include Louis-Hippolyte-La Fontaine, Ville-Marie, Viger (Montréal) and Joseph-Samson (Québec)
- ✓ Prohibition applies if quantity requires placards, unless carrying only Class 9
- ✓ Prohibition applies for Class 3 flammable liquid if total container capacity exceeds 30 L
- ✓ Prohibition applies for certain Class 2 gases in more than two cylinders or a cylinder with water capacity over 46 L, or if equipment generates naked flame/incandescent solid fuel

CHAPTER 102

Driving a Longer Combination Vehicle (LCV)

102.1 Definition and Licensing of LCVs

LCVs are road train combinations (type A, B or C) generally over 25 m in length that exceed Ministère des Transports du Québec standards. To operate an LCV you must comply with the Special Road Train Operating Permits Regulation and hold a Class 1 licence with a T endorsement.

- ✓ LCVs are combinations generally over 25 m in length exceeding standard limits
- ✓ You must hold a Class 1 driver's licence with a T endorsement to operate an LCV
- ✓ You must comply with the Special Road Train Operating Permits Regulation and the Highway Safety Code

102.2 T Endorsement Eligibility Requirements

To be eligible for the T endorsement, you must have sufficient experience driving a combination of road vehicles, have held a Class 1 driver's licence for at least 5 years, and have successfully completed special training.

- ✓ You must have held a Class 1 driver's licence for at least 5 years
- ✓ You must have sufficient experience driving a combination of road vehicles
- ✓ You must have successfully completed special training

102.3 Why LCVs Are Used and Their Challenges

LCVs carry larger cargo volumes, allowing transport of the same goods at lower fuel, labour and maintenance costs. However, they are harder to operate due to their length and dynamic behaviour, requiring compliance with specific regulatory requirements to protect road users.

- ✓ LCVs carry larger cargo volumes at lower fuel, labour and maintenance costs
- ✓ LCVs are harder to operate due to their length and dynamic behaviour
- ✓ Drivers must comply with the Special Road Train Operating Permits Regulation to safeguard road users

102.4 Definition and Licensing for LCVs

LCVs are road trains (type A, B or C) generally over 25 m long that exceed standard load/size limits and require special authorization and endorsement.

- ✓ LCVs are generally over 25 m in length and exceed standard load/size limits
- ✓ Operating an LCV requires compliance with the Special Road Train Operating Permits Regulation
- ✓ Driver must hold a Class 1 licence with a T endorsement
- ✓ T endorsement requires holding a Class 1 licence for at least 5 years plus special training
- ✓ LCV drivers must know both this Regulation and the Highway Safety Code

102.5 Special Operating Permit Requirements

LCVs exceeding regulated mass and length need a special operating permit issued by the Ministère des Transports du Québec.

- ✓ A special operating permit is required when exceeding the Vehicle Load and Size Limits Regulation
- ✓ The permit is issued by the Ministère des Transports du Québec
- ✓ Carry the original permit papers and appendices at all times when operating an LCV
- ✓ A special road train operating permit is valid for a maximum of twelve consecutive months

102.6 Characteristics and Limits of LCVs

LCVs have defined maximums for loaded mass, minimum tractor power/air capacity, and trailer length ranges.

- ✓ Maximum total loaded mass is 67,500 kg
- ✓ Tractor must have at least 1 HP per 180 kg of the LCV's total loaded mass
- ✓ Tractor air compressor must supply at least 425 L per minute to the brake system
- ✓ Maximum first semi-trailer length is 16.2 m
- ✓ Minimum first trailer length: 12 m for a B train, 13.5 m for an A or C double road train

102.7 Benefits and Challenges of LCVs

LCVs carry more cargo at lower cost but are harder to operate due to their length and dynamic behaviour.

- ✓ LCVs carry larger cargo volumes with lower fuel, labour and maintenance costs
- ✓ LCVs are harder to operate due to length and dynamic behaviour
- ✓ Drivers must comply with specific requirements to safeguard road users

102.8 Types of LCVs Covered by the Regulation

Permits may authorize A, B or C double road trains, distinguished by the coupling equipment and trailer length requirements.

- ✓ A double road train uses a tandem-axle single drawbar dolly converting the second trailer into a trailer
- ✓ C double road train uses a tandem-axle double drawbar dolly
- ✓ B double road train has the second trailer resting on a fifth wheel at the rear of the first trailer
- ✓ LCV double road trains generally exceed 25 m overall length

CHAPTER 103

Chapter 12 – Circle Check of a Vehicle: Purpose and Goals

103.1 Purpose of the Circle Check

The circle check is a sight and sound inspection of accessible components performed before driving to catch defects early and prevent unsafe operation.

- ✓ Circle check is a sight and sound inspection of certain accessible components
- ✓ Purpose is to ensure main components are in good working order
- ✓ Ensures owner and operator are informed of necessary repairs
- ✓ Ensures a vehicle with major defects is not used on the road

103.2 Mandatory Nature of the Circle Check

The circle check is compulsory for all subject vehicles, and driving without a valid one is prohibited for both driver and operator.

- ✓ Circle check is mandatory for all vehicles subject to inspection
- ✓ A driver cannot drive and an operator cannot let a vehicle be driven if the check was not carried out within the regulatory time frame
- ✓ A circle check report must be filled out for each circle check carried out

CHAPTER 104

Inspecting a Hydraulic Brake System

104.1 Required Hydraulic Brake Checks

Components of a hydraulic brake system differ from air brakes but require equal attention because a malfunction can be dangerous. Point 18 requires checking: the fluid level in the master cylinder reservoir (18.A, 18.1), the working order of the service brake warning light (18.3), the hydraulic or vacuum brake booster (18.C), and air-tightness of the brake system (18.B, 18.2).

- ✓ Check master cylinder fluid level, service brake warning light, brake booster, and system air-tightness
- ✓ A hydraulic brake malfunction can be dangerous and requires as much attention as air brakes

104.2 Hydraulic vs Vacuum Booster Test Sequences

With the ignition in 'ON', release the parking brake (only if it shares the warning light), and note if the service brake warning light is on. For hydraulic (electric pump) power brakes: apply moderate pedal pressure and listen for the pump, hold stronger-than-normal pressure for at least 10 seconds, note pedal movement, start the engine and note whether the warning light goes out. For vacuum-assisted power brakes: start the engine and confirm the light goes out, run a few seconds, turn off and pump the pedal, apply moderate pressure and restart while holding the pedal, note pedal movement, hold pressure at least 10 seconds, note whether the pedal maintains position, restart and confirm the light goes out.

- ✓ Hydraulic booster: listen for the electric pump when moderate pressure is applied
- ✓ Vacuum booster: after pumping and restarting under pressure, the pedal should go down slightly
- ✓ Hold stronger-than-normal pedal pressure for at least 10 seconds to test system integrity

104.3 Hydraulic Parking and Service Brake Road Check

Check the effectiveness of the parking brake (18.5), the parking brake warning light (18.4), and the service brake (18.D). Apply the parking brake, confirm the warning light turns on, try to gently move forward and confirm it holds, release and confirm the warning light turns off, drive slowly forward confirming all wheels turn freely, then press the brake pedal to confirm the vehicle stops quickly.

- ✓ Confirm the parking brake holds the vehicle and its warning light works when applied and released
- ✓ Confirm all wheels turn freely after release and the service brake stops the vehicle quickly

104.4 Point 18 Hydraulic Brake Checks Overview

Components of a hydraulic brake system differ from an air brake system and require equal attention because a malfunction could be dangerous. Point 18 requires checking: the fluid level in the master cylinder reservoir (18.A, 18.1), the working order of the service brake warning light (18.3), the hydraulic or vacuum brake booster (18.C), and air-tightness of the brake system (18.B, 18.2).

- ✓ Point 18 requires checking master cylinder fluid, service brake warning light, brake booster, and system air-tightness
- ✓ Hydraulic brake malfunctions can be dangerous and require equal attention to air brakes

104.5 Hydraulic Brake Test Sequence by Booster Type

With the ignition ON, ensure the parking brake is released (only if the service brake warning light is also the parking brake light), and note whether the service brake warning light is on. For hydraulic power brakes (electric pump): apply moderate pedal pressure and listen for the pump, hold stronger-than-normal pressure 10 seconds, note pedal movement, start engine, and note whether the light goes out. For vacuum-assisted brakes: start engine, note light goes out, let run a few seconds, turn off and pump pedal, apply moderate pressure and restart engine while holding pressure, note pedal movement, hold pressure 10 seconds, note pedal position, restart, and note whether light goes out.

- ✓ The step sequence depends on whether the power brake is hydraulic (electric pump) or vacuum-assisted
- ✓ Hold stronger-than-normal braking pressure for at least 10 seconds during the booster test
- ✓ Note whether the service brake pressure warning light goes out after the engine starts

104.6 Hydraulic Parking Brake and Service Brake Effectiveness

Check parking brake effectiveness (18.5), the parking brake warning light (18.4), and service brake effectiveness (18.D): apply the parking brake, confirm the warning light turns on, try to move forward and confirm the brake holds, release the parking brake and confirm the light turns off, move forward slowly ensuring all wheels turn freely, then press the brake pedal to confirm the vehicle stops quickly.

- ✓ Confirm the parking brake holds the vehicle and its warning light turns on when applied and off when released
- ✓ Confirm all wheels turn freely when released and the vehicle stops quickly when braked

CHAPTER 105

Appendix – Lists of Defects: List 1 – Heavy Vehicles

105.1 Coupling Device Defects (List 1)

List 1 applies to heavy vehicles other than buses, minibuses, or motor coaches. Coupling defects range from minor (missing/broken fasteners) to major (bent kingpin, movement between fifth wheel and frame, unlocked mechanism). Several major defects apply only when vehicles are coupled.

- ✓ Minor: fastener components of the coupling device missing, broken or loose; safety fasteners missing/damaged/insecure
- ✓ Major (1.A): coupling plate or kingpin bent so coupling is difficult, cracked, or not securely fixed
- ✓ Major (coupled): movement between fifth wheel and frame, >20% of fasteners damaged/missing, 25%+ of locking pins missing/not working, or mechanism not properly closed/locked

105.2 Steering System Defects

Steering defects include steering column misplacement, incorrect power steering fluid level, or a cut pump belt (minor). Major defects include column/wheel misplacement showing a risk of separation and inoperative power steering.

- ✓ Minor: steering column misplaced or adjustable wheel not holding position; power steering fluid not per manufacturer spec; pump belt cut
- ✓ Major (5.A): column or wheel misplacement showing a risk of separation; Major (5.B): power steering inoperative

105.3 Tire Defects and Steering Axle Rule

Tire defects include worn tread at the wear indicator, embedded foreign material, exposed cord/steel belt, and distortion (minor for a single tire in an assembly). A key major defect: on a steering axle of a vehicle with GVWR 4,500 kg+, two adjacent grooves worn to the wear indicator. A flat, air-losing, or bulging tire is major.

- ✓ Major (9.A): on a steering axle of a vehicle with GVWR 4,500 kg+, depth of 2 adjacent grooves equal to or less than the wear indicator
- ✓ Major (9.D): tire in contact with a fixed part, a flat tire, a tire losing air, or a bulge
- ✓ Minor: wear indicator touching roadway, foreign material embedded, or exposed cord/steel belt on a single tire in the assembly

105.4 Headlights and Lights Defects

A single low beam, parking, turn-indicator, brake, or licence plate light that fails is a minor defect. Failure of all low beams is major, as is failure of all turn-indicator lamps, all brake lights, or all parking lights at the rear of a single-unit or last vehicle of a combination.

- ✓ Minor: one low beam, parking, turn-indicator, brake, or licence plate light does not turn on
- ✓ Major: failure of ALL low beams (8.A); at the rear, failure of all turn-indicator lamps, all brake lights, or all parking lights (8.B)

105.5 Wheels, Hubs and Fasteners Defects

Minor defects include lubricant under minimum level or leaking (other than oozing) and insecure spare wheel mounting. Major defects include wheel bearing lubricant missing/not visible through sight glass, a missing/cracked/broken/insecure wheel fastener, and a wheel damaged or repaired with welds.

- ✓ Minor: lubricant under minimum level or leakage other than oozing; spare wheel mounting not securely fixed
- ✓ Major (12.B): a wheel fastener missing, cracked, broken or insecure; Major (12.C): wheel damaged or shows signs of weld repair

105.6 Hydraulic Brake System Defects

Hydraulic brake defects include low master cylinder fluid (minor) versus below one quarter of maximum (major), pedal reaching the floor, warning light faults, and inoperative brake boost. Parking brake not operating properly is a minor defect.

- ✓ Major (18.A): master cylinder fluid lower than one quarter of maximum; Major (18.B): pedal reaches floor in under 10 seconds or needs several presses to get pressure
- ✓ Major (18.C): brake boost/power assist inoperative; Major (18.D): important reduction in service brake capacity
- ✓ Minor: fluid below minimum, pedal reaches floor, warning light faults, parking brake not operating properly

105.7 Pneumatic Brake System Air Leak Limits

Pneumatic brake defects include warning device and compressor faults. Air leak rates are testable: minor if audible or exceeding 20/28/35 kPa per minute (single/two/three-unit), major if exceeding 40/48/62 kPa per minute (single/two/three-unit).

- ✓ Major air leak (19.C) within one minute: over 40 kPa (single-unit), 48 kPa (two-unit), 62 kPa (three-unit)
- ✓ Minor air leak (19.4) within one minute: audible or over 20 kPa (single-unit), 28 kPa (two-unit), 35 kPa (three-unit)
- ✓ Major: no low pressure warning working (19.A), air compressor not working (19.B), important reduction in braking capacity (19.D)

105.8 Frame and Cargo Body Defects

Minor frame defects include cracked side rails, cracked/broken cross members, or missing/insecure fixed body components. Major defects include side rails that might break, sagging that makes a mobile part touch the body, or more than 25% of sliding bogie locking pins missing/not engaged.

- ✓ Minor: side rails cracked, cross members cracked/broken, or fixed body components missing/insecure
- ✓ Major: side rails might break; side rails/cross members sagged so a mobile part touches the body; more than 25% of sliding bogie locking pins missing or not engaged

105.9 Suspension Defects

Suspension defects range from a broken non-main leaf spring or coil spring (minor) to numerous major defects: main leaf/rubber pad or 25%+ of leaf springs broken/missing, uncompensated air leaks, cracked composite springs, springs contacting moving parts, and broken axles affecting parallelism.

- ✓ Major (14.A): main spring leaf, rubber pad, or 25%+ of leaf springs broken or missing
- ✓ Major (14.B): air leak not compensated by compressor, or ball missing/deflated; Major (14.G): broken axle or positioning component affecting parallelism or wheel position
- ✓ Minor: leaf spring (other than main leaf) or broken coil spring; air leak with cord exposed/repaired

105.10 Fuel and Exhaust System Defects

Fuel system defects are all major: poorly fixed tank that could break loose, missing cap, and fuel leaks other than oozing. Exhaust: a leak elsewhere than intended is minor; a leak causing exhaust gas to enter the passenger compartment through a perforated floor is major.

- ✓ Fuel major defects: tank poorly fixed/could break loose (15.A), cap missing (15.B), fuel leak other than oozing (15.C)
- ✓ Exhaust major (16.A): leak causing exhaust gas to enter the passenger compartment where the floor is perforated

CHAPTER 106

Chapter 1 - Obligations

106.1 Circle Check Obligations

Drivers must do a sound and sight check of the vehicle's condition, record major or minor defects in the circle check report, keep it up to date and in the vehicle, report defects in writing, and ensure the operating vehicle has no major defects.

- ✓ Record major and minor defects in the circle check report
- ✓ Keep the circle check report up to date and in the vehicle
- ✓ Never operate a vehicle with a major defect

106.2 Transportation of Passengers and Goods Obligations

Drivers must comply with the legal passenger limit; arrange and secure baggage, cargo and mail in designated bus compartments; properly secure truck loads; and obey dangerous substance regulations including the prohibition on driving through tunnels.

- ✓ Comply with the legal passenger limit
- ✓ Properly secure the load on a truck
- ✓ Obey dangerous substance rules including tunnel prohibitions

106.3 Driver's Licence Obligations

Drivers must inform the operator if their licence/class/endorsements are modified, cancelled or suspended; comply with any peace officer who suspends the licence for exceeded hours, invalid licence or impairment; and hold only one driver's licence of the required class and endorsements.

- ✓ Inform the operator of any licence, class or endorsement changes
- ✓ Hold only one driver's licence of the required class and endorsements
- ✓ Comply with peace officer suspensions for exceeded hours or impairment

106.4 Driving/Off-Duty Hours and Registration Obligations

Unless exempted, drivers must keep accurate off-duty and driving time logs in the vehicle for the previous 14 days regardless of cycle. They must carry the vehicle's registration certificate and proof of insurance coverage.

- ✓ Keep accurate driving/off-duty logs for the previous 14 days in the vehicle
- ✓ Carry the vehicle's registration certificate and proof of insurance

106.5 Vehicle, Equipment, Size and Load Obligations

Drivers must buckle up and not drive with a defective seat belt; use flashing/rotating yellow lights per special permit conditions; mark outsized loads extending over one metre beyond the rear with a red flag/reflective panel and a red light at night; keep safety equipment (warning triangle, reflectors, flares or lamps); carry a special travel permit for outsized/overloaded vehicles and comply with its conditions; and obey peace officer instructions.

- ✓ Mark loads extending more than one metre beyond the rear with a red flag/panel and red light at night
- ✓ Keep safety equipment: warning triangle, reflectors, flares or lamps
- ✓ Carry and comply with the special travel permit for outsized or overloaded vehicles

106.6 Vehicles Subject to Heavy Vehicle Obligations

The Act respecting owners, operators and drivers of heavy vehicles applies regardless of licence class to: equipment transport vehicles with GVWR of 4,500 kg or more; emergency vehicles with GVWR 4,500 kg+; combinations with at least one 4,500 kg+ vehicle; tow trucks (any GVWR); buses (any GVWR); and vehicles carrying placarded dangerous substances (any GVWR).

- ✓ Applies to equipment/emergency vehicles with GVWR of 4,500 kg or more
- ✓ Applies to tow trucks and buses regardless of GVWR
- ✓ Applies to placarded dangerous substance vehicles regardless of GVWR

CHAPTER 107

The Most Popular Brake System (Chapter 4 – Pneumatic/Air Brake Systems)

107.1 Primary and Secondary Circuits

Air brake systems consist of a compressed air supply circuit plus two independent circuits: primary (P or 1) and secondary (S or 2). They can be installed differently between vehicles and work independently so that if one fails, the other continues to operate normally.

- ✓ Primary circuit is labelled P or 1; secondary is S or 2
- ✓ The two circuits work independently
- ✓ If one circuit fails, the other keeps operating

107.2 Advantages of Air Brakes

Air brakes are used on almost all heavy vehicles. They are usually more powerful than hydraulic systems, have proven reliability, and make it easy to connect other vehicles and air-powered equipment such as suspension.

- ✓ Air brakes are usually more powerful than hydraulic systems
- ✓ They have proven reliability
- ✓ Easy to connect other vehicles/air-powered equipment

CHAPTER 108

If Your Brakes Should Fail Despite All Your Efforts

108.1 Stopping a Vehicle With Hydraulic Brakes

To stop a vehicle with hydraulic brakes when they fail: pump the brake pedal with quick repeated strokes to build pressure, downshift, and apply the parking brake (which also serves as the emergency brake) if you cannot generate enough pressure, avoiding wheel lock-up. Find a safe stopping place, ensure the vehicle is stationary, then switch off the engine.

- ✓ Pump the hydraulic brake pedal with quick repeated strokes to build pressure
- ✓ Downshift to help slow the vehicle
- ✓ Apply the parking brake (emergency brake) if pressure cannot be generated
- ✓ Try not to lock up the wheels when applying the parking brake

108.2 Stopping a Vehicle With Air Brakes

With air brakes, apply the brakes to slow gradually WITHOUT pumping the pedal, downshift, find a safe stopping place, ensure the vehicle is stationary, then switch off the engine. If the low-pressure warning light or buzzer activates, there is not enough air pressure for the service brakes; stop as quickly as possible because service brakes will soon become unusable.

- ✓ With air brakes, do NOT pump the brake pedal—apply gradually
- ✓ A low-pressure warning light/buzzer means insufficient air for service brakes
- ✓ When the emergency brake takes over, stop as quickly as possible
- ✓ Downshift and switch off the engine once fully stopped

108.3 Brake Failure While Driving Down a Hill

Brakes can overheat if applied too often or too long. Before a steep grade, ensure brakes are in good condition, pulling over to check if unsure. If brakes fail, find a way to slow and stop quickly without losing control—time matters because higher speed makes stopping harder.

- ✓ Applying brakes too often or too long causes overheating
- ✓ Check brakes before starting down a steep grade; pull over if unsure
- ✓ Higher speed makes stopping harder, so act quickly on brake failure

108.4 Using Runaway Lanes and Signs

If no runaway lane with arrester bed exists, steer toward a safe spot to stop as quickly as possible. If a runaway lane with an arrester bed exists, use it to bring the vehicle to a complete stop. A LIT D'ARRÊT sign indicates distance to the runaway lane, and an S.O.S. PENTE RAIDE sign indicates the top of an especially steep grade.

- ✓ Use a runaway lane with an arrester bed if available to stop safely
- ✓ If no runaway lane, steer to a safe spot and pull over quickly
- ✓ A LIT D'ARRÊT sign indicates distance to the runaway lane
- ✓ An S.O.S. PENTE RAIDE sign warns of an especially steep grade

108.5 Causes of Brake Failure

Brakes may perform poorly or fail due to loss of air pressure or brake fluid leakage, mechanical failure by the wheels, overheating, wear, or improper adjustment. Monitor the pressure gauge frequently to ensure enough air pressure. Prevention through circle checks and proper braking technique is the best defense.

- ✓ Brake failure causes: air pressure loss/fluid leakage, mechanical failure, overheating, wear, improper adjustment
- ✓ Monitor the pressure gauge frequently for adequate air pressure
- ✓ Prevention (circle checks) is the best way to minimize mechanical failure

108.6 Stopping with Hydraulic Brake Failure

For a vehicle with hydraulic brakes: pump the brake pedal with quick repeated strokes to build pressure, downshift, and apply the parking brake (which also serves as the emergency brake) if you cannot generate pressure, avoiding wheel lock. Find a safe place to stop, ensure the vehicle is fully stationary, then switch off the engine.

- ✓ Pump the brake pedal (quick repeated strokes) to generate line pressure
- ✓ Downshift to slow the vehicle
- ✓ Apply the parking brake (emergency brake) if pressure can't be generated, avoiding wheel lock
- ✓ Ensure the vehicle is completely stationary, then switch off the engine

108.7 Stopping with Air Brake Failure

For air brakes: if the low-pressure warning light and buzzer activate, there is not enough pressure to work service brakes. Even if the emergency brake takes over, stop as quickly as possible. Apply brakes to slow gradually WITHOUT pumping the pedal, downshift, find a safe stop, ensure the vehicle is stationary, then switch off the engine.

- ✓ Low-pressure warning light/buzzer means insufficient air for service brakes — stop ASAP
- ✓ Apply brakes to slow gradually WITHOUT pumping the pedal (unlike hydraulic)
- ✓ Downshift, then find a safe place away from other road users
- ✓ Ensure the vehicle is stationary before switching off the engine

108.8 Brake Failure Going Down a Hill

Brakes can overheat if applied too often or too long. Check brakes before a steep grade; if unsure, pull over and check. If brakes fail on a hill, act quickly since higher speed makes stopping harder. Use a runaway lane with an arrester bed if available; otherwise steer to a safe stopping spot.

- ✓ Check brakes before a steep grade; pull over and check if unsure
- ✓ Use a runaway lane with an arrester bed if one is available
- ✓ If no runaway lane, steer to a safe spot to pull over quickly
- ✓ A LIT D'ARRÊT sign indicates distance to a runaway lane; S.O.S. PENTE RAIDE marks a steep grade

CHAPTER 109

Chapter 12 - Who Should Perform the Circle Check

109.1 Responsibility for Performing the Circle Check

The driver normally performs the circle check, but a person designated by the operator may do it, shifting accountability.

- ✓ The driver must perform the circle check of the vehicle they are driving
- ✓ A person designated by the operator may perform the check, making the operator accountable
- ✓ If the driver is also the designated person, the report must indicate this

109.2 Accepting or Refusing a Designated Person's Check

When a designated person performs the check, the driver may accept (co-sign) or refuse it, with different obligations for each.

- ✓ If accepting: driver ensures the check is valid (within previous 24 hours) and co-signs the report
- ✓ Accepting driver is not accountable for the check but must keep report updated and report defects during the trip
- ✓ If refusing: driver must perform a new circle check and fill out a new report
- ✓ Driver behind the wheel must always update the report and record defects observed during the trip

CHAPTER 110

Chapter 12 – Self-Evaluation Exercises (Answer Key)

110.1 Circle Check Responsibility and Reporting

The circle check does not have to be performed strictly by the driver (Q1 False). A driver who detects a minor mechanical defect during a trip IS required to enter it in the circle check report (Q4 False). The driver performing the circle check must check the power steering fluid level themselves (Q5 False).

- ✓ The circle check need not absolutely be performed by the driver
- ✓ Minor mechanical defects detected during a trip must be recorded in the report
- ✓ The driver must check the power steering fluid level during the circle check

110.2 Air Leak and Tire Wear Defect Classification

An air pressure drop of 35 kPa (5 psi) in one minute on a motor coach (three-unit threshold) is a minor defect (Q2 True). If two adjacent front-tire treads on a tractor are level with the wear indicator, you cannot operate the vehicle — this is a major defect (Q3 True).

- ✓ A 35 kPa (5 psi) per minute leak on a three-unit vehicle is a minor defect
- ✓ Two adjacent steering-axle grooves level with the wear indicator is a major defect that prohibits operation

CHAPTER 111

Drugs and Medications

111.1 Drug Categories and Effects

Like alcohol, drugs and certain medications affect the brain and impair driving. Drugs are classified by their effects on the central nervous system into depressants, stimulants and CNS disrupters. Effects vary by individual, product and context.

- ✓ The three main drug categories are depressants, stimulants and CNS disrupters
- ✓ Effects vary from person to person and even from one occasion to another
- ✓ The effect depends on the individual, the product consumed and the context of use

111.2 Cannabis Effects on Driving

Cannabis is the drug of choice with rising illegal drug use in Canada. It significantly impairs the ability to drive a motor vehicle.

- ✓ Cannabis causes difficulty concentrating, diminished perception of surroundings and loss of coordination
- ✓ Cannabis causes difficulty driving in a straight line, at constant speed, and evaluating distances
- ✓ Cannabis slows reaction time and reflexes and reduces ability to cope with unexpected hazards

111.3 Stimulants and False Confidence

Stimulants such as cocaine, speed and amphetamines give drivers a false sense of confidence and lead to more risk-taking. They do not ward off fatigue.

- ✓ Stimulants lead to more risk-taking such as speeding and aggressiveness
- ✓ Stimulants cause drowsiness and lack of concentration after the euphoria phase passes
- ✓ It is an error to believe stimulants can ward off fatigue

111.4 Combining Alcohol and Drugs

A Québec study (1999–2002) found almost 25% of all drivers killed in traffic accidents had drugs in their system, and about half of those had also consumed alcohol.

- ✓ Combining alcohol and drugs significantly increases the risk of a fatal traffic accident
- ✓ This is an extremely dangerous practice that should be avoided at all costs

111.5 Prescription and Over-the-Counter Medications

Some prescription and over-the-counter medications can alter driving by diminishing alertness, attention, vision or balance and affecting behaviour.

- ✓ Categories that affect driving include sedatives, minor tranquilizers, pain medications, cough/cold medications, hypnotic drugs and diabetes medications
- ✓ Consult a health care professional (physician, pharmacist) about how medications affect your ability to drive
- ✓ Always carefully read the instructions that come with medications

111.6 Stimulants and Combining Alcohol with Drugs

Stimulants such as cocaine, speed and amphetamines give false confidence and lead to risk-taking, then cause drowsiness and lack of concentration after the euphoria passes—so they cannot ward off fatigue. A Québec study (1999-2002) found nearly 25% of drivers killed had drugs in their system, about half also having alcohol.

- ✓ Stimulants give false confidence but lead to drowsiness and lack of concentration after euphoria passes
- ✓ It is an error to believe stimulants can ward off fatigue
- ✓ Combining alcohol and drugs significantly increases the risk of a fatal traffic accident and must be avoided

111.7 Medications That Affect Driving

Some prescription and over-the-counter medications alter driving ability by diminishing alertness, attention, vision or balance and by affecting behaviour. Consult a health care professional and always read instructions carefully.

- ✓ Categories affecting driving include sedatives, minor tranquilizers, pain medications, cough and cold medications, hypnotic drugs and diabetes medications
- ✓ Consult a physician or pharmacist about how medications affect your ability to drive
- ✓ Always carefully read the instructions on prescription and over-the-counter medications

CHAPTER 112

7 - Emergency Material

112.1 Flares, Triangle Reflectors or Lamps

Covers all vehicles wider than 2 metres (all Class 1 licence vehicles and most Class 3). In the cab or cargo space, ensure there are at least three flares, three triangle reflectors, or three lamps. Flares may not be used on vehicles carrying flammable or explosive materials. School buses must carry three triangle reflectors.

- ✓ Offence under Highway Safety Code section 225 if not equipped with at least three flares, three triangle reflectors, or three lamps
- ✓ Flares may not be used on vehicles carrying flammable or explosive materials
- ✓ School buses must be equipped with three triangle reflectors

112.2 Chemical Fire Extinguisher

Covers vehicles required to carry a chemical fire extinguisher (school buses, paratransit, certain dangerous-substance vehicles). Inside the vehicle, check that it is accessible, securely attached, and read the pressure gauge — the needle must point to the working-order zone.

- ✓ Defect 7.2 (minor): The chemical extinguisher is not securely mounted, inadequate, or difficult to access
- ✓ An extinguisher is inadequate if it lacks a pressure gauge or the gauge indicates 'Refill' or 'Zero'

112.3 First Aid Kit

Covers all vehicles required to carry a first aid kit (school buses, paratransit vehicles). Inside the vehicle, check the kit is accessible and securely attached. Checking the contents is not required but is suggested if something may be missing.

- ✓ Defect 7.1 (minor): The first aid kit is not securely mounted or difficult to access
- ✓ Checking the kit contents is not required as part of the circle check

CHAPTER 113

Move-Over Law

113.1 Move-Over Law Requirements

The Move-Over Law requires respecting a buffer zone around a stopped emergency vehicle (police, ambulance, fire, Contrôle routier Québec), tow truck, or any other vehicle when it is stopped AND its yellow arrow, rotating or flashing lights are activated. Slow down and change lanes to move over as far as possible after ensuring it is safe; stop if required.

- ✓ Move over for stopped vehicles displaying yellow arrow, rotating or flashing lights
- ✓ Slow down and change lanes safely, moving as far as possible from the stopped vehicle

CHAPTER 114

Certain Features of Your Vehicle and Their Impact on Your Driving

114.1 Vehicle Size and Weight

A vehicle's size and total loaded mass affect driving, speed and stopping distance. The load affects stability, accelerating power and stopping distance. The driver shares responsibility with the operator for complying with load and size regulations.

- ✓ Bear in mind vehicle size when turning or going through intersections to allow enough space
- ✓ Leave enough space when entering traffic, changing lanes, passing or stopping because load affects stability and stopping distance
- ✓ The driver shares responsibility with the operator for the Vehicle Load and Size Limits Regulation

114.2 Condition of the Tires

Tires bear the vehicle's weight, absorb shocks, and perform during acceleration, turning and braking. Heat makes rubber less resistant and increases the risk of a flat, blowout or fire.

- ✓ In summer, watch tire treads as they crack or become unstuck in intense heat
- ✓ Do not let air out of hot tires because pressure will be too low once cooled down
- ✓ If tires feel very hot, wait and let them cool before driving to avoid a blowout or fire
- ✓ Check tires regularly during circle checks and more frequently in very hot weather

114.3 Checking Fluids in Hot Weather

During hot weather, regularly monitor gauges that indicate engine and drivetrain fluid conditions to prevent heat-related failures.

- ✓ Check the engine oil pressure gauge and engine coolant temperature gauge
- ✓ Check the transmission fluid temperature gauge and the differential fluid temperature gauge

114.4 Getting Your Vehicle Ready for Winter

Extreme cold and sharp temperature changes can affect vehicle performance if not maintained. Extra precautions and special equipment are required for winter.

- ✓ Carry special winter equipment such as a snow shovel and booster cables
- ✓ Adjust seasonal components such as tires, windshield wipers and lubricants
- ✓ Although the owner is primarily responsible, ensure the vehicle is safe and ready before taking it on the road

114.5 Vehicle Size and Weight Effects

A vehicle's size and total loaded mass affect driving, speed and stopping distance. The load carried affects stability, accelerating power and stopping distance. You must consider these factors to react to hazards and share responsibility with the operator for compliance with load and size limits.

- ✓ Vehicle size and total loaded mass affect driving, speed and stopping distance
- ✓ The load affects your vehicle's stability, accelerating power and stopping distance
- ✓ Leave enough space when entering traffic, changing lanes, passing or stopping
- ✓ The driver shares responsibility with the operator for complying with the Vehicle Load and Size Limits Regulation

CHAPTER 115

Low Air Pressure Indicator & Service Brake Pressure Gauge (Chapter 4)

115.1 Low Air Pressure Indicator

If air pressure drops too low in a circuit for the service brakes to work effectively, a visual warning (warning light or wigwag), sometimes with a buzzer, alerts the driver. The activation level varies but is never lower than 380 kPa (55 psi).

- ✓ Two types of visual warning: warning light and wigwag
- ✓ Sometimes accompanied by a buzzer
- ✓ Never activated lower than 380 kPa (55 psi)
- ✓ At 380 kPa there is too little pressure to release the parking brake but enough to keep moving

115.2 Service Brake Pressure Gauge

This gauge measures the compressed air pressure in the brake chambers when the brakes are applied. Unlike the air pressure gauge, it is not a standard feature on heavy vehicles.

- ✓ Measures air pressure in the brake chambers when brakes are applied
- ✓ Not a standard feature on heavy vehicles

CHAPTER 116

Safety Tips for Transporting Certain Categories of Goods

116.1 Temperature and Filling of Liquid Tanks

Liquids change volume with temperature and vary in density, affecting weight limits, so tanks must not be overfilled.

- ✓ Account for the liquid's density and temperature when filling to comply with the manufacturer's maximum load on the certification plate
- ✓ Some liquids (e.g. sulfuric acid) are denser than water and may cause the vehicle to exceed weight limits
- ✓ Never fill a tank to more than 70% of its capacity

116.2 Displacement of Liquids and Baffles

Liquid movement in a tank creates thrust forces during braking and turns; baffles reduce forward/backward surge but not side-to-side movement.

- ✓ When braking, liquid forms a wave that strikes the front then rebounds rearward, exerting thrust in that direction
- ✓ Baffles stabilize forward/rearward liquid movement but side-to-side displacement still occurs and can overturn the vehicle
- ✓ Reduce speed well below the maximum limit, especially in slippery conditions and on curves, exits and turns

116.3 Livestock and Dry Bulk Transport

Livestock must be restrained to prevent rollover risk, and dry bulk tank trucks require smooth driving due to their high centre of gravity.

- ✓ Livestock must be restrained or in cages to avoid any risk of the vehicle overturning
- ✓ For dry bulk in tank trucks, avoid sudden steering or braking when negotiating curves or turning at intersections due to high centre of gravity

116.4 Distribution of Liquids in a Tank

Liquid must be distributed evenly across compartments for safe loading, unloading and handling.

- ✓ In multi-compartment tanks, distribute the liquid evenly in each compartment
- ✓ Avoid placing too much weight at the front or rear of the tank when loading and unloading

116.5 Livestock and Dry Bulk Handling

Livestock must be restrained or caged to prevent the vehicle from overturning. Tank trucks carrying dry bulk have a high centre of gravity requiring smooth driving.

- ✓ Livestock must be restrained or in cages to avoid the risk of overturning
- ✓ With dry bulk tank trucks, avoid sudden steering or braking in curves and at intersections due to high centre of gravity

CHAPTER 117

Special Operating Permit

117.1 Special Operating Permit Requirements

When an LCV exceeds the total loaded mass and length prescribed by the Vehicle Load and Size Limits Regulation, the operator or owner must obtain a special operating permit issued by the Ministère des Transports du Québec. The original permit and appendices must be carried at all times when operating on the road network.

- ✓ A special operating permit is required when an LCV exceeds prescribed mass and length limits
- ✓ The permit is issued by the Ministère des Transports du Québec
- ✓ You must carry the original permit papers and appendices at all times when operating

117.2 Special Permit Validity Period

A special road train operating permit is valid for a maximum of twelve consecutive months.

- ✓ A special road train operating permit is valid for a maximum of twelve consecutive months

CHAPTER 118

Chapter 12 – Vehicles Subject To and Exempt From the Circle Check

118.1 Vehicles Requiring a Circle Check

Certain vehicles by weight rating, type, or cargo must undergo a circle check to keep their road authorization.

- ✓ Road vehicles with a GVWR of 4,500 kg or more require a circle check
- ✓ Combinations where at least one vehicle has a GVWR of 4,500 kg or more require inspection of all vehicles in the combination
- ✓ Buses, minibuses and tow trucks require a check regardless of GVWR
- ✓ Vehicles under 4,500 kg GVWR transporting dangerous substances requiring safety marks must undergo a check

118.2 Vehicles Exempt from the Circle Check

Specific categories of vehicles, mainly tool, farm, emergency, and personal-use vehicles, are exempt from the circle check requirement.

- ✓ Tool vehicles (grader, wheel loader, back hoe) are exempt
- ✓ Heavy vehicles used for emergency service or disasters, farm tractors, farm machinery and farm trailers are exempt
- ✓ Heavy vehicles used by an individual for personal, non-commercial purposes are exempt
- ✓ Two/three-axle straight-body trucks transporting unprocessed farm/forest/fishery products (driver is also the producer), or empty on return trip, are exempt

CHAPTER 119

8 - Headlights and Lights

119.1 Low Beams

Check the working order of the low beams. Switch them on in the driver's compartment and check the front right and front left from outside, ensuring high beams are not activated.

- ✓ Defect 8.A (major): None of the low beams work
- ✓ Defect 8.1 (minor): One of the low beams does not work

119.2 Parking and Tail Lights

Check parking (front) and tail (rear) lights. Front parking lights are only mandatory on vehicles 2.03 m wide or less. Switch on and check front right, front left, rear right, rear left for each vehicle in the combination. A compliant vehicle has one right and one left rear tail light (plus front parking lights if width ⩽ 2.03 m).

- ✓ Defect 8.B (major): None of the rear parking lights work for a single-unit vehicle or the last vehicle in a combination
- ✓ Defect 8.1 (minor): One rear light out on a single-unit vehicle; or when hitched one/both rear parking lights out on tractor or first semi-trailer of a double road train, or one out on the last vehicle; or one/both front parking lights out
- ✓ Front parking lights are only mandatory on vehicles 2.03 m wide or less

119.3 Turn Signal Lights (Flashers)

Check front and rear turn signals. Switch on one side then the other and check front right, front left, rear right, rear left for each vehicle. A compliant vehicle has front and rear turn signals on both right and left.

- ✓ Defect 8.B (major): On a single-unit or last vehicle, none of the rear right or none of the rear left turn signals work
- ✓ Defect 8.1 (minor): One/both front turn signals out; when hitched one/both rear signals on tractor or first semi-trailer of a double road train out; on single-unit or last vehicle with GVWR < 4,500 kg one/both turn signals out

119.4 Brake Lights

Check brake lights working order safely — use a second person or reflections. Press the brake pedal and confirm lights switch on. A compliant vehicle has one rear left and one rear right brake light. For vehicles with two or more brake lights per side, no defect if at least one per side works.

- ✓ Defect 8.B (major): None of the brake lights switch on for a single-unit vehicle or the last vehicle of a combination
- ✓ Defect 8.1 (minor): One brake light out on single-unit; or when hitched one/both out on tractor or first semi-trailer of a double road train, or one out on last vehicle
- ✓ For two or more brake lights per side, no defect if at least one on each side switches on

119.5 Turn Signal Lights

Switch turn signals on each side and check front right/left and rear right/left. A compliant vehicle has front right/left and rear right/left turn signal lights.

- ✓ Major defect (8.B): none of the rear right or rear left turn signals work on a single-unit or last vehicle of a combination
- ✓ Minor defect (8.1): one/both front turn signals out; when hitched, rear turn signal(s) out on tractor/first semi-trailer; or on a single-unit/last vehicle with GVWR under 4,500 kg, one/both turn signals out

119.6 Lighting and Signalling Devices Overview

Requirements concerning lights apply at all times, not only at night. Heavy vehicle lighting and signalling devices include: high/low beams, parking/tail/side marker lights, turn signal lights, brake lights, licence plate light, clearance lights, and identification lights.

- ✓ Light requirements must be considered at all times, not only at night
- ✓ Devices include high/low beams, parking/tail/marker, turn signals, brake lights, licence plate light, clearance lights, and identification lights

119.7 Rear Licence Plate Light

Check the working order of the light illuminating the licence plate from outside at the rear. A compliant vehicle has a white light positioned to illuminate the rear licence plate. School buses also require checking alternately flashing stop-sign lights, flashing red lights, and alternately flashing yellow warning lights.

- ✓ Defect 8.1 (minor): The rear licence plate light is not working
- ✓ School buses require additional checks of stop-sign flashers, flashing red lights, and yellow warning lights (sections 20.7, 20.8, 20.9)

CHAPTER 120

Chapter 1 - In the Event of an Accident

120.1 Responsibilities When Involved in an Accident

Under the Highway Safety Code, if involved in an accident you must remain at or return to the scene immediately, help any injured victim, contact the police, and provide any information required by the police officer at the scene.

- ✓ Remain at or return to the accident scene immediately
- ✓ Help injured victims and contact the police
- ✓ Provide required information to the police officer at the scene

120.2 Acting as a Witness or First on Scene

If first to arrive or a witness, park about 30 m from the scene and turn on emergency lights, contact police immediately, turn off the ignition of the involved vehicle if anyone is injured, and set out flares or reflectors to warn others. A first-aid course and a first-aid kit are recommended.

- ✓ Park about 30 m from the accident scene with emergency lights on
- ✓ Turn off the ignition of the involved vehicle if anyone is injured
- ✓ Ensure you can provide assistance without endangering yourself or others

CHAPTER 121

Controls and Components – Driver's Cab (Chapter 4)

121.1 Brake Pedal (Air System)

The brake pedal activates the service brakes on all wheels including the trailer/semi-trailer. Pressing it lets compressed air flow from the service reservoirs into the brake chambers; more pedal pressure means more air. Required pressure varies by vehicle and load.

- ✓ Brake pedal activates service brakes on ALL wheels including trailer
- ✓ More pedal pressure sends more air to brake chambers
- ✓ Required pressure varies by vehicle and load

121.2 Semi-Trailer Hand Brake Control

The hand brake control applies service brakes ONLY on the semi-trailer's wheels. It can check whether the semi-trailer is properly hitched and whether trailer service brakes work. It must NEVER be used as a parking brake or as a service brake on the road.

- ✓ Hand brake applies service brakes only to the semi-trailer wheels
- ✓ Never use it as a parking brake
- ✓ Never use it as a service brake on the road

121.3 Parking Brake Control

The parking brake control is a yellow diamond-shaped knob on the dashboard. Pull up to release air from brake chambers, activating springs that clamp the wheels. It holds tractor and semi-trailer stationary. Push down before driving to release the parking brakes by filling chambers with air.

- ✓ Parking brake control is a yellow diamond-shaped knob
- ✓ Pull up to apply (releases air, springs clamp wheels)
- ✓ Push down to release parking brakes before driving
- ✓ Must pull up before getting out of the cab

121.4 Trailer Air Supply Control

The trailer air supply control is an octagonal red knob on the dashboard, always the same colour and shape in all vehicles. Push down to send air to trailer/semi-trailer reservoirs and release the trailer parking brake. Pull up to close the valve, exhaust air, and apply the trailer parking brake — used to immobilize a trailer before unhitching.

- ✓ Trailer air supply control is an octagonal RED knob
- ✓ Push down to supply air to the trailer/semi-trailer
- ✓ Pull up to apply the trailer parking brake and immobilize before unhitching
- ✓ Colour and shape are standard in all vehicles

121.5 Dangers of Misusing the Hand Brake

Using the hand brake as a service brake on the road is less effective than the brake pedal, distributes braking unequally, overheats semi-trailer brakes reducing effectiveness, and can cause skidding on icy surfaces.

- ✓ Less effective than the service brake pedal
- ✓ Causes unequal braking and semi-trailer brake overheating
- ✓ Can cause skidding on ice

CHAPTER 122

Appendices – Driver's Licence Classes: Class 1

122.1 Class 1 Licence Authorization

A Class 1 licence authorizes driving combinations of vehicles: double-axle road tractors (net weight 4,500 kg or more) hauling trailers/semi-trailers; triple-axle road tractors hauling trailers/semi-trailers; and Class 3 trucks hauling specified trailers/semi-trailers. A road tractor has no cargo space and is permanently equipped with a fifth wheel.

- ✓ Class 1 permits a double-axle road tractor (4,500 kg+ net) hauling one or more trailers/semi-trailers
- ✓ Class 1 permits a triple-axle road tractor hauling one or more trailers/semi-trailers
- ✓ Class 1 permits Class 3 trucks hauling trailers/semi-trailers of 4,500 kg+ (equipment) or 2,000 kg+ (other)
- ✓ A road tractor has no cargo space and is permanently equipped with a fifth wheel
- ✓ Class 1 holders may drive all other vehicle categories except motorcycles

CHAPTER 123

Passing

123.1 Passing procedure

Passing uses the same checks as changing lanes and means changing lanes twice — into the left lane then back into the right. Turn off signals after each lane change. A heavy vehicle needs greater distance to pass because it is longer and heavier than a car. Ensure other road users understand your intentions.

- ✓ Passing is two lane changes; turn off the signal after each
- ✓ Allow greater distance to pass because a heavy vehicle is longer/heavier
- ✓ Avoid using the horn unless necessary; at night flick high-to-low beams to signal presence

123.2 Do not signal others to pass

Do not signal other drivers when to pass — there may be people or vehicles you cannot see, and a driver relying on your signal may become overconfident and less alert. Concentrate on signalling only your own intentions.

- ✓ Never signal other road users when to pass
- ✓ Signal only your own intentions

123.3 Passing Another Vehicle

Passing uses the same checks as changing lanes and means changing lanes twice—into the left lane then back to the right. Turn off signals after each lane change. You need a greater distance to pass because your vehicle is longer and heavier than a car.

- ✓ Passing is changing lanes twice—left then back to the right
- ✓ Turn off turn signals after each lane change
- ✓ Allow greater distance to pass because heavy vehicles are longer and heavier
- ✓ Avoid using the horn when passing unless absolutely necessary
- ✓ At night, flick between high and low beams to signal your presence before passing

123.4 Do Not Signal Others to Pass

Do not signal other road users when to pass. You may not see all people or vehicles, and drivers who pass on your signal may become overconfident and less alert. Concentrate only on signalling your own intentions.

- ✓ Never signal other road users when to pass
- ✓ You may not see all hazards that would make passing unsafe
- ✓ Concentrate on signalling your own intentions only

CHAPTER 124

Particularities for Inspecting Other Types of Vehicles

124.1 Multiple Trailers and Straight-Body Trucks

For a combination with more than one trailer, repeat the same inspection on the second trailer as on the first. For straight-body trucks (or hauling a trailer), the method is similar but adapt to the braking system and whether a trailer is hitched. A straight-body truck alone has one coupling system (1.C, 1.F, 1.1, 1.2) and only one parking brake to check (18.5, 19.5). When hitched to a trailer, the coupling system is different and located completely at the rear of the truck.

- ✓ Repeat the same inspection on each trailer of a multi-trailer combination
- ✓ A straight-body truck alone has only one parking brake to check (18.5, 19.5)
- ✓ When a straight-body truck hauls a trailer, the coupling system is at the rear of the truck

124.2 Buses, Motor Coaches and City Buses

Buses and motor coaches require additional passenger-safety checks: central aisle lighting, solidity of stanchions and luggage racks/compartments, condition of protective material, and accessibility of emergency exits (section 20). For city buses, the engine compartment is usually at the rear; some start there after the initial approach, then circle from front or rear. Additional city bus elements include emergency exit and door warning device (10.B, 10.C), emergency material (7.1, 7.2), stanchions and shock-absorbing material (20.1, 20.2), floors and steps (20.3), interior lighting (20.4), luggage compartments (20.5) and seats/benches (20.6).

- ✓ Buses require additional checks of aisle lighting, stanchions/racks, protective material and emergency exit accessibility
- ✓ City bus additional checks include the emergency exit and emergency door warning device (10.B, 10.C)
- ✓ Adapt the circle check to the bus layout and the type of transportation it provides

124.3 Multi-Trailer Combinations and Straight-Body Trucks

For a combination with more than one trailer, repeat the same inspection on each additional trailer. For straight-body trucks, the circle check is similar but adapted to the braking system and whether a trailer is hitched. A straight-body truck alone has only one coupling system and one parking brake to check. A straight-body truck hitched to a trailer has a different coupling system located completely at the rear.

- ✓ Repeat the trailer inspection for each additional trailer in a multi-trailer combination
- ✓ A straight-body truck alone has only one parking brake to check (18.5, 19.5)
- ✓ A straight-body truck hitched to a trailer has a different coupling system located at the rear (1.C, 1.F, 1.1, 1.2)

CHAPTER 125

Appendix – Lists of Defects: List 2 – Buses

125.1 Scope and Bus-Specific Door Defects (List 2)

List 2 applies to buses (other than motor coaches), minibuses, and any trailer towed by a bus/minibus/motor coach. Bus-specific major door defects include an emergency exit blocked and an inadequate emergency door or its warning light/buzzer not working.

- ✓ List 2 applies to buses (not motor coaches), minibuses, and trailers towed by them
- ✓ Major (10.B): emergency exit blocked; Major (10.C): emergency door inadequate or its warning light/buzzer not working

125.2 School Bus Window Defect (List 2)

For buses, a specific glass defect (11.4) applies to school buses: a side window on each side of and immediately behind the driver's compartment that fails to provide the required view due to damage is a minor defect.

- ✓ Minor (11.4): school bus side windows beside and immediately behind the driver's compartment failing to provide required view due to damage
- ✓ This is in addition to standard windshield/side window and mirror defects (11.1–11.3)

125.3 Passenger Transport Defects (Buses)

Passenger transport defects for buses are all minor and include insecure stanchions/grab handles, missing shock-absorbing material, damaged floors/steps, inoperative aisle lighting, insecure luggage racks, inadequate seats, and stop sign or flashing light failures.

- ✓ Minor (20.7): stop sign not operating properly or one flashing light not turning on
- ✓ Minor (20.8): one flashing light or one alternately flashing yellow light not turning on
- ✓ Minor: insecure stanchions/grab handles/guard panels, missing shock-absorbing material, damaged floor/steps, inoperative access/aisle lighting, insecure luggage racks, inadequate seats

CHAPTER 126

If Your Vehicle Catches Fire

126.1 Fire Prevention and Monitoring

To avoid fire, take preventive measures before a trip and at each stop (see circle checks in Chapter 12). Continuously check temperature readings and use rearview mirrors to check for smoke coming from the rear of the vehicle.

- ✓ Perform circle checks before and during trips to prevent fires
- ✓ Continuously monitor temperature readings
- ✓ Use rearview mirrors to check for smoke from the rear

126.2 Responding to a Vehicle Fire

If fire breaks out, pull off the road away from buildings and vehicles, switch off the engine, and move away if there is an explosion risk. Stop traffic, direct people away, and call for assistance. Then, if possible, unhitch the semi-trailer and move the tractor, switch off the engine, and use a fire extinguisher. If the fire is in the engine compartment, raise the hood. Never use water on a fuel-fed fire; keep your back to the wind when using an extinguisher.

- ✓ Pull off away from buildings/vehicles, switch off engine, move away if explosion risk
- ✓ Call for assistance and direct people away from the vehicle
- ✓ Unhitch the semi-trailer and move the tractor away if possible
- ✓ Do NOT use water on a fuel-fed fire; keep your back to the wind with an extinguisher

126.3 Fire Prevention and Detection

Take preventive measures through circle checks before and during a trip. Continuously check temperature readings and use rearview mirrors to check for smoke from the rear of the vehicle.

- ✓ Perform circle checks to prevent fires
- ✓ Continuously check temperature readings and watch mirrors for smoke from the rear

CHAPTER 127

Chapter 12 - Vehicle Used By More Than One Driver

127.1 Successive Drivers Circle Check Rules

When multiple drivers use a vehicle within 24 hours, each must perform or accept a valid circle check.

- ✓ Each driver must perform a circle check before getting behind the wheel within a 24-hour period
- ✓ If operator designated a person, each subsequent driver may accept (co-sign) or refuse it
- ✓ A driver refusing must perform a new circle check and fill out another report
- ✓ A driver regaining control within 24 hours of their own check needs no new report, but the initial report must be on board and accurately reflect the vehicle's condition

127.2 Special Rules for Buses, Minibuses, Tow Trucks and Emergency Vehicles

For these specific vehicles, successive drivers can accept and co-sign a check even if it was not done by a designated person.

- ✓ Successive drivers can accept and co-sign the circle check report even if not performed by a designated person
- ✓ The co-signing driver assumes responsibility and must keep the report updated
- ✓ If the driver refuses, they must perform a new circle check

127.3 Team Drivers (Alternating Driving)

For team-driven vehicles, recommended procedures cover each driver performing checks, with reports valid for 24 hours.

- ✓ First driver carries out the circle check and fills out a report; relief driver does another when taking the wheel
- ✓ Both reports remain valid for a period of 24 hours
- ✓ If the operator designates one driver, the other may co-sign (accept) or perform a new check (refuse)

127.4 Motor Coaches Special Case

For team-driven motor coaches, the relief driver may co-sign the first driver's report even if the first driver was not designated by the operator.

- ✓ Relief driver may co-sign the first driver's report if accepted, even if first driver was not designated by operator
- ✓ The co-signing driver is accountable for the check and must keep it updated and report defects

CHAPTER 128

Driving in Difficult Conditions

128.1 Driving at Night — Speed and Headlight Range

Night driving is difficult and demanding, contributing to fatigue. It is strongly recommended to drive more slowly than the speed limit at night so your stopping distance stays within your headlight range.

- ✓ The faster you drive, the narrower your field of vision, increasing perception and reaction time for hazards
- ✓ Make sure your stopping distance is within the range of your headlights
- ✓ Low beams light up to about 75 m ahead and high beams up to about 150 m ahead

128.2 Reduced Vision at Night

Night driving reduces visual acuity, contrast perception, colour discrimination and depth perception, making distance and speed hard to evaluate.

- ✓ Reduce speed to compensate for reduced night vision
- ✓ Look beyond the area covered by headlights to detect pedestrians or obstacles with enough time to react
- ✓ Never wear tinted glasses at night because they reduce visibility

128.3 Managing Glare at Night

Glare from lights can impair vision for several seconds, during which you can cover a fair distance before your eyes readjust to the dark.

- ✓ Limit and lower dashboard light sources and avoid looking directly at other vehicles' headlights; look toward the right side of the road
- ✓ If blinded by oncoming headlight glare, slow down until your eyes readjust to the dark
- ✓ Flip back to high beams immediately after passing an oncoming vehicle; if another driver won't dim their high beams, do not insist—slow down, stay right, look right, and pull over if needed

128.4 Rain or Shine Hazards

Even fine weather can be dangerous due to a false sense of security. Blinding sunlight is a major hazard. When it begins to rain, the road surface becomes slippery as water mixes with dust, sand and oil.

- ✓ Slow down when it begins to rain so you do not have to steer or brake abruptly on slippery pavement
- ✓ At dawn, dusk, rain, snow or fog, turn on your headlights so you are visible to others
- ✓ Parking and tail lights alone are not sufficient for others to see you clearly

128.5 Reduced Visibility and Winter Driving

When roads are snow-covered, slippery or visibility is reduced, braking and steering are much more difficult. Loss of traction affects acceleration, braking and handling.

- ✓ If visibility is reduced by snow or freezing rain, use wipers and pull over to clean windshield, windows and mirrors
- ✓ If visibility is nil, pull over somewhere safe as soon as possible
- ✓ Slow down in winter conditions due to less traction; be especially careful when braking since cars following behind may not be visible to you

128.6 Bridges and Overpasses — Black Ice

Road surfaces on bridges and overpasses can become especially slippery and dangerous when temperatures fall near freezing due to condensation forming an invisible sheet of black ice.

- ✓ Bridges and overpasses freeze before other road surfaces near the freezing point
- ✓ An invisible sheet of 'black ice' may form on the roadway due to condensation

128.7 Driving at Night - Stopping Distance and Headlights

Night driving is difficult and demanding and contributes to fatigue. It is strongly recommended to drive slower than the speed limit at night because the faster you drive the narrower your field of vision. Make sure your stopping distance stays within the range of your headlights.

- ✓ Drive more slowly than the speed limit at night for safety
- ✓ With low beams you can see about 75 m ahead; with high beams about 150 m ahead
- ✓ Make sure your stopping distance is within the range of your headlights
- ✓ The faster you drive the narrower your field of vision

128.8 Rain or Shine Driving Conditions

Driving can be dangerous even in fine weather due to false security and blinding sunlight. When rain first mixes with road dust, sand and oil, pavement becomes slippery. At dawn, dusk, or in rain/snow/fog it is hard to see and be seen—turn on headlights.

- ✓ Blinding sunlight can become a major hazard even in fine weather
- ✓ When it begins to rain, water mixing with dust, sand and oil makes pavement slippery—slow down to avoid abrupt steering or braking
- ✓ Turn on your headlights at dawn, dusk and in rain, snow or fog to be visible
- ✓ Parking and tail lights are not sufficient for others to see you clearly

128.9 Winter Driving and Reduced Visibility

If snow or freezing rain reduces vision, use wipers and pull over to clean the windshield, windows, mirrors and clear ice/snow off wipers. On snow-covered or slippery roads braking and steering are much harder—slow down. If visibility is nil, pull over safely. Winter poses icy patches and black ice with less traction.

- ✓ If visibility is reduced, use wipers and pull over to clean windshield, windows and mirrors
- ✓ On snow-covered or slippery roads, braking and steering are much more difficult—slow down
- ✓ If visibility is nil, pull over somewhere safe as soon as possible
- ✓ Loss of traction affects your vehicle's acceleration, braking and handling

128.10 Bridges and Overpasses - Black Ice

Road surfaces on bridges and overpasses can become especially slippery and dangerous when temperatures fall near freezing. Because of condensation, an invisible sheet of ice called 'black ice' may form on the roadway.

- ✓ Bridges and overpasses become especially slippery when temperatures fall near the freezing point
- ✓ Condensation can form an invisible sheet of 'black ice' on the roadway
- ✓ Exercise extra caution and slow down on bridges and overpasses in near-freezing conditions

128.11 Being Seen and Clean Windows

At night, being seen by others is as important as being able to see. Clean lights, mirrors and windshield keep your field of vision unrestricted and minimize negative light effects.

- ✓ Make sure your vehicle's lights are clean and in good working order
- ✓ Keep mirrors and windshield clean inside and out, especially in bad weather

128.12 Reduced Visual Ability at Night

Night driving reduces visual acuity, ability to make out contrasts, discriminate colours and perceive depth. Objects blend with darkness, making distance and speed hard to judge. Reduce speed and look beyond your headlights to detect pedestrians or obstacles in time.

- ✓ Night driving reduces visual acuity, contrast perception, colour discrimination and depth perception
- ✓ Reduce your speed to compensate for reduced visibility at night
- ✓ Look beyond the area covered by your headlights to detect pedestrians or obstacles with enough time to react

128.13 Avoiding Glare When Driving at Night

Glare from lights can impair vision for several seconds, during which you cover distance before your eyes readjust. Never wear even slightly tinted glasses at night. Specific techniques help manage glare from oncoming and following vehicles.

- ✓ Never wear glasses that are even slightly tinted at night because they reduce visibility
- ✓ Avoid looking directly at other vehicles' headlights; look toward the right side of the road
- ✓ If blinded by oncoming glare, slow down and let your eyes readjust before resuming speed
- ✓ If other drivers keep high beams on, click yours on and off once; if they don't dim, slow down and look to the right, pulling over if needed

128.14 Being Seen and Keeping Windows Clean

At night, being seen is as important as being able to see. Keep vehicle lights clean and in good working order. Keep mirrors and windshield clean inside and out for unrestricted vision and minimal glare effects, especially in bad weather.

- ✓ At night, being seen by others is just as important as being able to see
- ✓ Make sure your vehicle's lights are clean and in good working order
- ✓ Keep mirrors and windshield clean inside and out, especially important in bad weather

128.15 Car Drivers Following Heavy Vehicles

Car drivers sometimes follow too closely behind heavy vehicles and are usually unaware that the heavy vehicle driver cannot see them. Be especially careful when braking.

- ✓ Car drivers often follow too closely and are not aware the heavy vehicle driver cannot see them
- ✓ Be especially careful when braking to protect vehicles following behind you

CHAPTER 129

Other Parts — Reservoirs, Compressor & Chambers (Chapter 4)

129.1 Compressed Air Reservoirs

Heavy vehicles have at least three compressed air reservoirs. The supply reservoir receives air from the compressor and feeds two service reservoirs, which supply air to the brake chambers. Trailers/semi-trailers have their own reservoirs supplied by the truck's service reservoirs.

- ✓ At least three reservoirs on heavy vehicles
- ✓ Supply reservoir receives air from compressor
- ✓ Two service reservoirs supply the brake chambers
- ✓ Trailers have own reservoirs supplied by truck service reservoirs

129.2 Compressor Failure and Air Supply

If the compressor fails, brakes work for a while, but air supply can run out quickly depending on brake use, accessory air use, and system air-tightness. When it runs low, the low air pressure indicator warns and the emergency brake activates. Pull over and repair immediately.

- ✓ Reservoirs store enough air for brakes to work a while after compressor failure
- ✓ Air can run out quickly
- ✓ Low air pressure indicator warns and emergency brake activates
- ✓ Pull over and repair as soon as warning appears

129.3 Air Compressor and Pressure Regulator

The compressor draws in and compresses outside air and sends it to the supply reservoir. It is engine-driven and operates only when required and the engine runs. Systems maintain a spread of 138 kPa (20 psi). The compressor typically starts below 724 kPa (105 psi) and stops at 862 kPa (125 psi). The pressure regulator manages this.

- ✓ Compressor is driven by the engine
- ✓ Systems maintain a 138 kPa (20 psi) spread
- ✓ Compressor starts when pressure drops below ~724 kPa (105 psi)
- ✓ Compressor stops at ~862 kPa (125 psi)
- ✓ Pressure regulator starts compressor before 550 kPa (80 psi) and stops it between 805-945 kPa (117-137 psi)

129.4 Brake Chambers

There is a brake chamber near each wheel. Air from service reservoirs pushes a diaphragm attached to a push rod. On drum brakes, the push rod operates a slack adjuster driving a camshaft, and the S-cam clamps the brakes. There are single chambers (service brake) and double chambers (service + parking brake).

- ✓ A brake chamber sits near each wheel
- ✓ Air pushes a diaphragm attached to a push rod
- ✓ Single chamber = service brake only
- ✓ Double chamber = service brake + parking brake

129.5 Emptying (Bleeding) Reservoirs

Clean air is essential for brake performance. Impurities build up from temperature/environmental changes and must be removed by bleeding reservoirs completely every day using the air bleed valve. In winter, bleed after operating while warm to avoid valves freezing open.

- ✓ Bleed reservoirs completely every day
- ✓ Use the air bleed valve on each reservoir
- ✓ In winter, bleed while vehicle is still warm to prevent freezing
- ✓ Still bleed even if an air dryer/purifier is fitted

129.6 Air Purifier (Air Dryer)

Most modern heavy vehicles have an air purifier (air dryer/filter) located between the compressor and supply reservoir. It filters, dries and removes impurities from the air, but does not eliminate the need to bleed the reservoirs.

- ✓ Located between compressor and supply reservoir
- ✓ Filters and dries air, removes impurities
- ✓ Does NOT replace the need to bleed reservoirs

129.7 Emergency Reserve on Some Vehicles

Some vehicles (e.g. buses) have an additional emergency air reservoir. If service brakes fail and emergency brakes activate, this reservoir provides air to move the vehicle a few metres from where it stopped.

- ✓ Some vehicles (buses) have an additional emergency reservoir
- ✓ Allows moving the vehicle a few metres after emergency stop

CHAPTER 130

Chapter 12 – Who Should Perform the Circle Check

130.1 Who Performs the Circle Check

The driver normally performs the circle check, but the operator may designate another person, in which case the operator becomes accountable.

- ✓ The driver must perform the circle check of the vehicle he/she is driving
- ✓ A person designated by the operator may perform the check, making the operator accountable
- ✓ If the designated person is also the driver, the report must indicate the check was done as the person designated by the operator

130.2 Accepting or Refusing a Designated Person's Check

When a designated person performs the check, the driver may accept and co-sign it or refuse it and perform a new one.

- ✓ If accepting, driver must ensure the check is valid (within previous 24 hours) and co-sign the report
- ✓ When accepting, driver is not accountable for the check but must keep the report updated and report trip defects
- ✓ If refusing, driver must perform a new circle check and fill out a new report
- ✓ Driver behind the wheel must always update the report and record defects observed during the trip

CHAPTER 131

9 - Tires

131.1 Tread Groove Depth

Only tires on weight-bearing axles must be checked (auxiliary lift axle recommended). Check tread groove depth. The tread wear indicator is set at 1.6 mm, found facing the wear indicator marker.

- ✓ Defect 9.A (major, steering axle of vehicle GVWR ⩾ 4,500 kg): The depth of two adjacent grooves is equal to or less than the tread wear indicator
- ✓ Defect 9.1 (minor, all tires): The tread wear indicator touches the roadway or a groove depth is equal to/less than the indicator (1.6 mm)

131.2 Tread and Sidewall Condition

Check tread and sidewall of all tires for wear, foreign material, damage, and bulging. To detect a flat dual tire, strike it with a hammer. For retreads, a separation 6 mm wide or less is normal. Defect severity differs for a single tire/both duals versus one of the duals.

- ✓ Defect 9.B/9.C (major, single tire or both duals): foreign body that could puncture; cut/wear/damage exposing cord or steel belt
- ✓ Defect 9.2/9.3 (minor, one of the duals): foreign material that could puncture; cut/wear/damage exposing cord or steel belt
- ✓ Defect 9.D (major, all tires): tire touches a fixed component, shows air leak or is flat, or shows a bulge from a carcass defect
- ✓ Defect 9.4 (minor): abnormal deformation, or tread/sidewall rubber separated from the carcass

131.3 Tread Depth and Wear Indicators

Only tires on weight-bearing axles must be checked (auxiliary lift axle tires recommended). Check groove depth in the tread; the tread wear indicator is set at 1.6 mm, found facing the wear indicator marker.

- ✓ Major defect (9.A): on a steering-axle tire of a motor vehicle with GVWR 4,500 kg or more, the depth of two adjacent grooves is equal to or less than the tread wear indicator
- ✓ Minor defect (9.1): for all tires, a tread wear indicator touches the roadway or a groove depth is equal to or less than the tread wear indicator

131.4 Tire Valves

Check the condition of the tire valves on tires around the vehicle.

- ✓ Defect 9.5 (minor): The tire valve is worn or damaged (e.g. scraped or cut)
- ✓ Inspect valves on tires around the vehicle

CHAPTER 132

Appendix – Lists of Defects: List 3 – Motor Coaches

132.1 Scope and Brake System Applicability (List 3)

List 3 applies to motor coaches; trailers towed are inspected under List 2. Notably, the electric brake system and hydraulic brake system are NOT subject to inspection for motor coaches, while the pneumatic brake system defects fully apply.

- ✓ List 3 applies to motor coaches; any towed trailer is inspected under List 2
- ✓ Electric brake system (17) and hydraulic brake system (18) are NOT subject to inspection for motor coaches
- ✓ Pneumatic brake system defects (19) with standard air leak limits fully apply

132.2 Reduced Suspension Inspection (Motor Coaches)

For motor coaches, suspension inspection is limited due to accessibility, covering only certain items: air leak with exposed/repaired cord (minor), uncompensated air leak or ball missing/deflated (major), and broken axle/positioning component affecting parallelism (major).

- ✓ Motor coach suspension checks are limited to items 14.2, 14.B, and 14.G
- ✓ Major (14.B): air leak not compensated by compressor or ball missing/deflated; Major (14.G): broken axle affecting parallelism or wheel position

CHAPTER 133

Chapter 1 - Move-Over Law and Road Work

133.1 Move-Over Law Requirements

Because heavy vehicles are dangerous to road workers, the Move-Over Law requires respecting a buffer zone around a stopped vehicle (emergency vehicle, tow truck, or other) when its yellow arrow signal, rotating or flashing lights are activated. Slow down, change lanes to move over as far as possible when safe, and stop if circumstances require.

- ✓ Move over around a stopped vehicle with activated warning/flashing lights
- ✓ Slow down and change lanes as far as possible when safe to do so
- ✓ Stop the vehicle if circumstances require it

133.2 Driving in the Presence of Road Work

Drivers must pay attention to signs near and on road work sites. The speed limit indicated on an orange sign must be observed just as the limit on a white road sign.

- ✓ Pay attention to signs near and on road work sites
- ✓ Observe the speed limit on orange road-work signs as you would a white sign

CHAPTER 134

Air Pressure Gauges and Indicators (Chapter 4)

134.1 Low Air Pressure Indicator

When air pressure drops too low for effective service braking, a visual warning (warning light or wigwag), sometimes with a buzzer, alerts the driver. Activation varies by system but is never lower than 380 kPa (55 psi). At 380 kPa it is too low to deactivate the parking brake but enough to keep moving if already in motion.

- ✓ Low air pressure warning is never lower than 380 kPa (55 psi)
- ✓ Two visual warning types: warning light and wigwag
- ✓ At 380 kPa the parking brake cannot be released but the vehicle can keep moving if already in motion

134.2 Air Pressure Gauge

The air pressure gauge measures air pressure in the service reservoirs. Because the system has two independent circuits, there are two gauges (or one gauge with two needles), one per circuit. There is no gauge for the supply reservoir.

- ✓ Air pressure gauge measures service reservoir pressure
- ✓ Two gauges or one gauge with two needles, one per circuit
- ✓ No gauge for the supply reservoir

134.3 Service Brake Pressure Gauge

This gauge measures the compressed air pressure in the brake chambers when the brakes are applied. Unlike the air pressure gauge, it is not a standard feature in heavy vehicles.

- ✓ Measures air pressure in the brake chambers when braking
- ✓ Not a standard feature on heavy vehicles

CHAPTER 135

Labelling Dangerous Substances

135.1 Labelling and Placarding Duties

Dangerous substances must be labelled using prescribed safety marks. Before taking possession, the driver must verify classification, proper safety marks on containers, and shipper-provided placards.

- ✓ Verify the dangerous substances have been classified
- ✓ Verify the shipper affixed appropriate safety marks (label, placard or sign) on containers
- ✓ Placards must be placed on each end and each side of the vehicle

135.2 Nine Classes of Dangerous Substances

Dangerous substances are divided into nine classes with recognizable placards: Class 1 Explosives, Class 2 Gases, Class 3 Flammable liquids, Class 4 Flammable solids/self-igniting/water-reactive, Class 5 Oxidizers/organic peroxides, Class 6 Toxic/infectious, Class 7 Radioactive, Class 8 Corrosive, Class 9 Miscellaneous.

- ✓ Class 1 Explosives; Class 2 Gases; Class 3 Flammable liquids (flash point ⩽ 60.5°C, e.g. gasoline, diesel)
- ✓ Class 4 Flammable solids; Class 5 Oxidizers and organic peroxides; Class 6 Toxic and infectious substances
- ✓ Class 7 Radioactive; Class 8 Corrosive; Class 9 Miscellaneous products (e.g. PCBs, asbestos)

135.3 Class 1 Explosives Placard Exemptions

Class 1 has subdivisions 1.1 through 1.6. Placards are not required for Class 1.4 in certain quantities, and Québec requires special authorization for certain explosives.

- ✓ No placards required for Class 1.4 if quantity is 1,000 kg or less
- ✓ No placards required for Class 1.4S regardless of quantity
- ✓ In Québec, drivers transporting listed explosives must obtain authorization from the Sûreté du Québec

CHAPTER 136

Chapter 12 - Reporting Defects and When to Perform the Circle Check

136.1 Driver Responsibility to Report Defects

Drivers must always report defects noticed during a trip, being in the best position to detect unusual behaviour.

- ✓ Drivers are always responsible for reporting defects noted during a trip, even if a designated person performed the check
- ✓ Drivers must be able to carry out an inspection and recognize defects normally detected during a circle check

136.2 Timing of the Circle Check

A circle check must generally be valid within 24 hours prior to driving, with re-inspection rules when not done by a designated person.

- ✓ An inspection must be performed within the 24 hours prior to driving; otherwise a new one is required
- ✓ If the check was not done by a designated person, the driver must perform a new one even if fewer than 24 hours have elapsed
- ✓ Drivers must plan to perform a new circle check before 24 hours have elapsed, except for certain vehicles with different limits

CHAPTER 137

Appendices – Driver's Licence Classes: Class 2 and Class 3

137.1 Class 3 Licence (Straight-Body Trucks)

A Class 3 licence authorizes straight-body trucks: double-axle trucks of 4,500 kg or more net weight, or any truck with three or more axles. It covers trucks hitched to trailers under 2,000 kg, or 2,000–4,500 kg carrying permanent equipment, and 2-axle (4,500 kg+) or 3+ axle truck tractors not hitched to a trailer.

- ✓ Class 3 permits a double-axle truck of 4,500 kg+ or any truck with 3+ axles
- ✓ Class 3 covers hitched trailers under 2,000 kg net weight
- ✓ Class 3 covers hitched trailers 2,000–4,500 kg used only for permanent equipment
- ✓ Class 3 permits truck tractors (2-axle 4,500 kg+ or 3+ axle) not hitched to a trailer
- ✓ Class 3 excludes Class 1 combinations, Class 2 buses, and Class 6 motorcycles

137.2 Class 2 Licence (Buses)

A Class 2 licence authorizes driving a bus designed to carry more than 24 passengers, and a bus hitched to a trailer provided the trailer weighs less than 2,000 kg. Class 2 holders may drive all other categories except vehicle combinations (Class 1) and motorcycles.

- ✓ Class 2 permits buses designed for more than 24 passengers
- ✓ Class 2 permits a bus hitched to a trailer under 2,000 kg
- ✓ Class 2 excludes vehicle combinations (Class 1) and motorcycles

CHAPTER 138

In the Presence of Road Work

138.1 Road Work Speed Limits

Heavy vehicle drivers must pay attention to signs near and on road work sites. Observe the speed limit indicated on the orange sign just as you would a speed limit on a white road sign.

- ✓ Obey the speed limit on orange road work signs as with white signs
- ✓ Pay attention to signs near and on road work sites

CHAPTER 139

Driving Uphill

139.1 Uphill driving and gearing

On a gentle grade you may keep constant speed by accelerating slightly without downshifting. On a steeper grade, use the transmission properly and judge the right moment to downshift for maximum efficiency, especially with a heavy load. To start on an uphill grade, use the service brake to prevent rolling back; when ready, ease off the clutch to the friction point, release the brake, then gradually accelerate.

- ✓ On steep grades, time downshifts properly for maximum efficiency, especially with a heavy load
- ✓ When starting uphill, use the service brake to prevent rolling backward
- ✓ Ease off the clutch to the friction point, release the brake, then accelerate gradually

139.2 Driving Up a Grade

On a gentle grade you may only need to accelerate slightly. On steeper grades, use the transmission properly and judge the proper moment to downshift for maximum efficiency—especially with a heavy load. To start on an uphill grade, use the service brake to prevent rolling back, then ease off the clutch to the friction point, release the brake, and gradually accelerate.

- ✓ On steeper grades, downshift at the proper moment for maximum efficiency
- ✓ Proper gear-change timing is especially important with a heavy load
- ✓ To start uphill, use the service brake to prevent rolling backward
- ✓ Ease off the clutch to the friction point, release the brake, then accelerate

CHAPTER 140

Reflective Strips

140.1 Reflective Strip Requirements

Under the Motor Vehicle Safety Act, wide heavy trailers and semi-trailers must have reflective strips, with limited exemptions.

- ✓ All trailers and semi-trailers 2.05 m wide or wider with GVWR of 4,500 kg or more must have reflective strips
- ✓ Trailers designed exclusively as a dwelling or office are exempt
- ✓ School buses are not required to have reflective strips, but if they do, the strips must be yellow

140.2 Reflective Strip Placement and Colours

Reflective strips must be placed in specified locations with prescribed heights and colours around the trailer.

- ✓ Upper corners facing rear: at the top, white
- ✓ Rear bumper bar horizontal surface, full width facing rear: red and white
- ✓ Rear across full trailer width: as horizontal as possible between 375 mm and 1,525 mm from ground, red and white (or solid white/yellow or yellow and white on lower rear/side)
- ✓ Each side facing outward, continuous or equally spaced over at least 50% of vehicle length, beginning and ending at the far ends: red and white, yellow and white, solid white or solid yellow

140.3 Reflectors as Alternative

A series of reflectors may replace reflective strips if spaced within the required limits.

- ✓ Reflectors may be used instead of reflective strips in some cases
- ✓ The centre of each reflector must be no more than 100 mm from the centre of adjacent reflectors

140.4 Reflective Strip Placement and Colour

Standards specify location, height and colour of reflective strips: upper rear corners (white, at top), rear bumper bar full width (red and white), rear across full width (red/white or lower-body solid white/yellow), and each side over at least 50% of length.

- ✓ Upper rear corners: white, at the top; rear bumper bar: red and white over full width
- ✓ Rear across full width and side strips: as horizontal as possible, between 375 mm and 1,525 mm from the ground
- ✓ Side strips must run continuous or equally spaced over at least 50% of vehicle length, beginning and ending at the far ends

CHAPTER 141

Types of LCVs Covered by the Regulation

141.1 Types of LCVs Authorized by Permit

A permit may authorize: an A double road train (tractor, semi-trailer, tandem-axle single drawbar dolly converting the second semi-trailer to a trailer); a C double road train (tandem-axle double drawbar dolly); a B double road train (semi-trailer resting on a fifth wheel at the rear of the first); or a double road train with a tandem-axle dolly.

- ✓ An A double road train uses a tandem-axle single drawbar dolly to convert the second semi-trailer to a trailer
- ✓ A C double road train uses a tandem-axle double drawbar dolly
- ✓ A B double road train has the second semi-trailer resting on a fifth wheel at the rear of the first

141.2 LCV Total Loaded Mass Limits

The maximum total loaded mass limit is 67,500 kg. For an LCV consisting of a tractor, semi-trailer and tandem-axle dolly (excluding the second semi-trailer), the total loaded mass must be within regulatory limits for the tractor and semi-trailer plus 2,000 kg.

- ✓ The maximum total loaded mass limit for an LCV is 67,500 kg
- ✓ For a tractor/semi-trailer/tandem-axle dolly combination, the limit is the tractor and semi-trailer regulatory limits plus 2,000 kg

141.3 LCV Minimum Horsepower and Air Compressor

The tractor must have at least 1 HP per 180 kg of the LCV's total loaded mass. It must also be equipped with an air compressor with a capacity of at least 425 L per minute to supply the brake system.

- ✓ The tractor must have at least 1 HP per 180 kg of the LCV's total loaded mass
- ✓ The tractor's air compressor must have a capacity of at least 425 L per minute for the brake system

141.4 LCV First Semi-Trailer Length Limits

The maximum length of the first semi-trailer is 16.2 m. The minimum length varies: 12 m for a B train and 13.5 m for an A or C double road train.

- ✓ The maximum length of the first semi-trailer is 16.2 m
- ✓ The minimum first semi-trailer length is 12 m for a B train
- ✓ The minimum first semi-trailer length is 13.5 m for an A or C double road train

CHAPTER 142

If an Animal Strays Onto the Road

142.1 Staying Alert in High-Risk Wildlife Areas

Road signs in wooded areas warn of wildlife. Animals can venture onto the road and cause serious accidents, especially at night when attracted by headlights. Obey speed limits, be extra careful in areas of reduced visibility (bends, hills, roadside vegetation), and be especially cautious in early morning, dusk and evening, particularly during May, June, October and November.

- ✓ Animals are attracted by headlights, so be on guard especially at night
- ✓ Obey speed limits and watch areas of reduced visibility
- ✓ Be extra careful at dawn, dusk and evening during May, June, October and November

142.2 Reacting to an Animal on the Road

If an animal is on the road, slow down and press your brakes several times to alert motorists behind you. Be alert for other animals nearby. Do not rely on gadgets such as deer whistles, as they have not been proven effective.

- ✓ Slow down and press brakes several times to warn following motorists
- ✓ Watch for other animals in the vicinity
- ✓ Do NOT rely on deer whistles—they are not proven effective

CHAPTER 143

Service, Parking & Drum/Disc Brakes (Chapter 4)

143.1 Parking Brake Placement and Springs

Parking brakes are mounted only on the rear wheels of the tractor/truck/bus (requiring double chambers on at least one axle) and on trailer/semi-trailer wheels (except most auxiliary lift axles). A parking brake is always paired with a service brake and uses a powerful spring that also serves as the emergency brake.

- ✓ Parking brakes on rear wheels of tractor/truck/bus
- ✓ Requires double brake chambers on at least one axle
- ✓ Also on trailer/semi-trailer wheels (except most lift axles)
- ✓ Always paired with a service brake
- ✓ Powerful spring applies parking brake and activates emergency brake

143.2 Spring Brake Operation

Pulling the parking brake lever empties air from the parking portion of the double chamber, letting springs relax and apply the brake. Pushing the lever down lets air in, compresses the springs, and releases the wheels.

- ✓ Pull lever UP: air empties, springs relax, parking brake applies
- ✓ Push lever DOWN: air enters, springs compress, wheels free to turn
- ✓ Springs mechanically apply the brake with no air

143.3 Service Brake Air Power vs Hydraulic

A service brake is on each wheel. Braking power in air systems comes from compressed air pressure, not the driver's muscle strength (unlike hydraulic systems).

- ✓ Service brake installed on each wheel
- ✓ Air brake power comes from compressed air, not muscle strength
- ✓ Brake pedal lets service reservoir air into chambers

143.4 Drum Brakes (S-cam)

Drum brakes use brake shoes with linings that press against the inside of a drum. S-cam drum brakes are the most common on heavy vehicles; an S-shaped cam pulls the shoes apart. Friction produces heat; overheated linings lose effectiveness.

- ✓ Most common brake on heavy vehicles is the S-cam drum brake
- ✓ S-shaped cam pulls the brake shoes apart
- ✓ Two brake shoes with linings press against the drum
- ✓ Overheated linings lose effectiveness

143.5 Disc Brakes

Disc brakes use a disc on the hub with pads held by a caliper that grips both sides of the disc. Common in motor coaches and increasingly on other heavy vehicles. Compared to drum brakes, they use less air (smaller chamber) and resist braking loss at high temperatures.

- ✓ Caliper pushes pads against a disc
- ✓ Most common in motor coaches
- ✓ Consume less air than drum brakes (smaller chamber)
- ✓ Less likely to lose efficiency at high temperatures

CHAPTER 144

Driving Downhill

144.1 Check brakes before descending

Check your brakes before starting down any hill, regardless of brake system type — this is of the utmost importance no matter the grade.

- ✓ Always check brakes before descending any hill, whatever the brake system
- ✓ Push down on the brake pedal to confirm brakes work before a steep descent

144.2 Descending gentle vs steep grades

On a gentle grade, letting up slightly on the accelerator may control speed. On a steep grade, check brakes, slow down and adjust to a safe speed, then select the appropriate gear before starting down. Avoid changing gears while descending. On very steep grades use engine compression and retarders if equipped.

- ✓ Select the appropriate gear before descending and avoid changing gears on the grade
- ✓ On steep grades, slow to a safe speed before starting down
- ✓ Use engine compression and retarders on very steep grades if equipped

144.3 Brake overheating on long grades

Applying brakes repeatedly or continuously on a long grade can overheat them and cause failure when needed. This is why shifting into the right gear before descending is essential to maintain control all the way down.

- ✓ Continuous or repeated braking on long grades can overheat brakes and cause failure
- ✓ Shift into the right gear before descending to control speed with engine compression

144.4 Proper braking technique on long grades

When you must use brakes on a long grade: push hard enough to feel the vehicle slow (with air brakes, avoid pumping which reduces reservoir air pressure). Reduce speed to about 10 km/h below the safe speed, then release the brakes. Repeat when speed climbs back to the safe speed. Example: safe speed 50 km/h — brake down to 40 km/h, release, and re-brake to 40 when back at 50.

- ✓ Apply firm brake pressure to feel the vehicle slow, then release
- ✓ With air brakes, do not pump the brakes — it reduces reservoir air pressure
- ✓ Brake to about 10 km/h below the safe speed, release, and repeat as needed

144.5 Check Brakes Before Descending

Checking your brakes before starting down a hill is of utmost importance regardless of grade steepness or brake system type. If it has been a while since the last circle check, repeat the brake check procedure.

- ✓ Always check your brakes before starting down any hill
- ✓ This applies regardless of brake system type or grade steepness
- ✓ Repeat the circle check brake procedure if it has been a while

144.6 Descending Gentle vs Steep Grades

On a gentle grade, easing off the accelerator may control speed. Before a steep grade, test the brakes by pressing the pedal, slow to a safe speed, and select the appropriate gear BEFORE descending. Avoid changing gears going down. On very steep grades use engine compression and retarders if equipped.

- ✓ Test brakes by pressing the pedal before descending a steep grade
- ✓ Select the appropriate gear before starting down—avoid changing gears while descending
- ✓ Use engine compression and retarders on very steep grades if equipped

144.7 Using Brakes on a Long Grade

Repeated or prolonged brake use on a long grade can overheat brakes and cause failure. This is why the correct gear must be selected before descending. If braking is needed: push hard enough to feel the vehicle slow, and with air brakes avoid pumping (it reduces reservoir air pressure). Reduce to about 10 km/h below the safe speed, then release; repeat as needed.

- ✓ Repeated/prolonged braking on a long grade overheats brakes and can cause failure
- ✓ With air brakes, do not pump the brakes—it reduces reservoir air pressure
- ✓ Brake to about 10 km/h below the safe speed, then release, and repeat
- ✓ Example: safe speed 50 km/h—brake down to 40 km/h, release, repeat as speed climbs back

144.8 Reading downhill grade signs

Grade warning signs use a percentage — the higher the percentage the steeper the grade. If the grade extends more than one kilometre, that is indicated. A sign showing 15% and 3 km means a grade of 150 m per kilometre over at least 3 km. Some signs show two successive grades with different percentages.

- ✓ Higher percentage on the sign means a steeper grade
- ✓ Distance shown on the sign indicates how long the grade extends
- ✓ A 15% / 3 km sign means 150 m drop per km over at least 3 km

144.9 Mandatory brake check areas

Some places have signs requiring you to pull over and check your brakes; the sign shows the distance to the brake check area. On arrival the VÉRIFICATION sign requires a full stop before the Stop sign. The VÉRIFICATION sign applies to vehicles/combinations with a total loaded mass of at least 3,000 kg — drivers must check their own brakes after stopping.

- ✓ Come to a full stop at a mandatory VÉRIFICATION brake check area before the Stop sign
- ✓ Applies to vehicles/combinations with total loaded mass of at least 3,000 kg
- ✓ If it has been a while since the circle check, repeat the brake check procedure

144.10 Check Road Signs and Grade Signs

Signs warn of steep grades. The higher the percentage, the steeper the grade. If a grade extends over one kilometre, the sign indicates it. A sign example of 15% over 3 km means a grade of 150 m for every kilometre over at least 3 km; stacked signs indicate two successive grades of different percentages.

- ✓ The higher the percentage on a grade sign, the steeper the grade
- ✓ Grade signs indicate distance if the grade extends more than one kilometre
- ✓ A 15%/3 km sign means 150 m drop per kilometre over at least 3 km

144.11 Mandatory Brake Check Areas

Some places have signs requiring you to pull over at a specific spot to check brakes. A VÉRIFICATION sign indicates you must come to a full stop before the Stop sign. This applies to vehicles or combinations with a total loaded mass of at least 3,000 kg, whose drivers must check their own brakes.

- ✓ A VÉRIFICATION brake check sign requires a full stop before the Stop sign
- ✓ Applies to vehicles/combinations with total loaded mass of at least 3,000 kg
- ✓ Drivers must check the condition of their own brakes at the brake check area

CHAPTER 145

Other Parts of the Vehicle – Reservoirs and Compressor (Chapter 4)

145.1 Compressed Air Reservoirs

Heavy vehicles have at least three reservoirs. The supply reservoir receives air directly from the compressor and feeds the other two service reservoirs, which supply air to the brake chambers near the wheels. Trailers and semi-trailers have their own reservoirs supplied by the tractor's service reservoirs.

- ✓ Heavy vehicles have at least three compressed air reservoirs
- ✓ Supply reservoir feeds the two service reservoirs
- ✓ Service reservoirs supply the brake chambers
- ✓ Trailers have own reservoirs fed by tractor service reservoirs

145.2 Reservoir Air Supply and Compressor Failure

Reservoirs store enough air to keep brakes working for a while if the compressor fails, but air can run out quickly depending on use, accessories, and system leaks. When this happens the low air pressure indicator warns and the emergency brake activates; pull over and get repairs.

- ✓ Brakes still work for a while if the compressor fails
- ✓ Air may run out quickly with heavy use or leaks
- ✓ Emergency brake activates when air runs out; pull over and repair

145.3 Air Compressor and Pressure Regulator

The compressor draws in outside air, compresses it, and sends it to the supply reservoir. It is engine-driven and runs only when needed. Systems maintain a spread of 138 kPa (20 psi); commonly the compressor starts below 724 kPa (105 psi) and stops at 862 kPa (125 psi). The pressure regulator starts the compressor before 550 kPa (80 psi) and stops it between 805 kPa (117 psi) and 945 kPa (137 psi).

- ✓ Compressor is driven by the engine and runs only when required
- ✓ Systems maintain a 138 kPa (20 psi) pressure spread
- ✓ Compressor typically cuts in below 724 kPa and cuts out at 862 kPa
- ✓ Pressure regulator manages compressor operation to maintain reservoir pressure

145.4 Bleeding (Emptying) Reservoirs

Clean air is essential; impurities build up from temperature and environment. Reservoirs must be bled completely every day using the air bleed valve on each. In winter, bleed after operating while the vehicle is still warm to prevent valves freezing open. Bleed even if an air purifier/dryer is fitted.

- ✓ Bleed reservoirs completely every day
- ✓ Use the air bleed valve on each reservoir
- ✓ In winter bleed while warm to avoid frozen valves
- ✓ Still bleed even if an air purifier/dryer is installed

145.5 Air Purifier (Dryer/Filter)

Most modern heavy vehicles have an air purifier located between the compressor and the supply reservoir. It filters and dries the air and removes impurities, but does not eliminate the need to bleed reservoirs.

- ✓ Air purifier sits between compressor and supply reservoir
- ✓ It filters, dries, and removes impurities
- ✓ It does not replace daily bleeding

145.6 Emergency Reservoir on Some Vehicles

Some vehicles such as buses have an additional emergency reservoir. If service brakes fail and emergency brakes engage, its air can move the vehicle a few metres past the stopping point.

- ✓ Some vehicles (e.g. buses) have an extra emergency reservoir
- ✓ It can move the vehicle a few metres after an emergency stop

CHAPTER 146

Chapter 6 Self-Evaluation Key Facts

146.1 Key Testable Facts on Dangerous Situations

During hydroplaning, do NOT apply the brakes—take your foot off the accelerator to maintain control. A blowout in one of the dual wheels on a semi-trailer is not felt strongly. If skidding, turn the steering wheel in the same direction as the skid. Hydraulic brakes CAN be affected by overheating. Emergency brakes take over when there is insufficient compressed air in the air brake reservoirs.

- ✓ Hydroplaning: do NOT brake; take foot off accelerator
- ✓ A dual-wheel blowout is not felt strongly by the driver
- ✓ Steer in the same direction as a skid to regain control
- ✓ Overheating DOES affect hydraulic brake performance
- ✓ Emergency brakes take over when air pressure in reservoirs is insufficient

CHAPTER 147

Appendices – Licence Endorsements

147.1 F, M, and T Endorsements

Endorsements may be added to Class 1, 2, and 3 licences. The F endorsement certifies authorization to drive a heavy vehicle with air brakes; the M endorsement certifies a manual transmission; the T endorsement certifies a Class 1 holder may drive a road train (double road train over 25 m) requiring a special permit.

- ✓ F endorsement authorizes driving a heavy vehicle equipped with air brakes
- ✓ M endorsement authorizes driving a heavy vehicle with a manual transmission
- ✓ T endorsement authorizes a Class 1 holder to drive a road train over 25 m with a special permit

CHAPTER 148

If an Animal Strays onto the Road

148.1 Wildlife Awareness and High-Risk Conditions

Road signs warn of wildlife in wooded areas. Animals are attracted by headlights, so be especially alert at night. In high-risk areas, obey speed limits and be extra careful in reduced-visibility areas (bends, hills, roadside vegetation) and during early morning, dusk, and evening—particularly in May, June, October and November.

- ✓ Animals are attracted by headlights; be alert especially at night
- ✓ Be extra careful during early morning, dusk and evening in May, June, October, November
- ✓ Obey speed limits and watch reduced-visibility areas near wildlife signs

148.2 Reacting to an Animal on the Road

If an animal is on the road, slow down and press your brakes several times to alert motorists behind you. Watch for other animals nearby. Do not rely on gadgets like deer whistles, which have not been proven effective.

- ✓ Slow down and pump brakes several times to alert following motorists
- ✓ Watch for additional animals in the vicinity
- ✓ Do NOT rely on deer whistles — they are not proven effective

CHAPTER 149

Regulation Respecting Environmental Standards for Heavy Vehicles

149.1 Scope and Purpose of Environmental Standards

Since June 1, 2006, heavy vehicle owners must ensure their vehicles meet environmental standards controlling emissions and pollution control devices, benefiting air quality, maintenance and fuel savings.

- ✓ Applies to road vehicles and combinations with GVWR of 4,500 kg or more (except certain farm/tool vehicles) and to buses, minibuses and tow trucks
- ✓ Standards aim to reduce harmful emissions, ensure better maintenance and enable fuel savings
- ✓ Heavy vehicles used in a competition, show or race on a track/field closed to other traffic are exempt

149.2 Emission Control Devices

Subject vehicles must have properly functioning pollution control devices, which may not be removed or modified except for defective replacement.

- ✓ Vehicles must have a properly functioning device/system reducing hydrocarbons, carbon monoxide, nitrogen oxide or particles
- ✓ Owners may not remove or modify a pollution control device except to replace a defective one
- ✓ Replacement devices must be equivalent to the manufacturer's replacement unit and bear the manufacturer's code
- ✓ Standards apply throughout Québec except regions north of the 55th parallel

149.3 Roadside Emissions Testing and Enforcement

Carrier enforcement officers may test emissions and issue offence reports; non-compliant owners must repair vehicles and obtain compliance attestation.

- ✓ Officers may measure emissions if visible exhaust fumes or odour give reasonable cause to believe non-compliance
- ✓ If levels exceed standards, an offence report is issued
- ✓ The owner must obtain an attestation of compliance from an accredited repair establishment within 30 days of the repair notice
- ✓ Using the vehicle after 30 days without attestation makes the owner liable to a fine double the initial amount; selling a non-compliant vehicle is prohibited until attestation is issued

149.4 Environmental Standards Scope

Since June 1, 2006, heavy vehicle owners must ensure vehicles meet environmental standards for emissions control and pollution control devices. Standards aim to reduce emissions, improve maintenance and save fuel.

- ✓ Applies to road vehicles/combinations with GVWR of 4,500 kg or more (except farm and tool vehicles), plus buses, minibuses and tow trucks
- ✓ Applies regardless of fuel type on public roads
- ✓ Vehicles used in a closed competition/show/race are exempt

149.5 Roadside Emissions Testing

Carrier enforcement officers may measure emissions if visible fumes or odour give reasonable cause. Non-compliance leads to an offence report and repair obligations with strict deadlines.

- ✓ Officers may test emissions when visible fumes or odour give reasonable cause
- ✓ Owner must obtain an attestation of compliance from an accredited establishment within 30 days of a repair notice
- ✓ Using the vehicle after 30 days without attestation doubles the fine; selling a non-compliant vehicle is prohibited until attestation is issued

CHAPTER 150

Chapter 12 – Vehicle Used by More Than One Driver

150.1 Successive Drivers Circle Check Rules

When a vehicle is used by successive drivers within 24 hours, each must perform or accept a valid circle check before driving.

- ✓ Each successive driver within a 24-hour period must perform a circle check before driving
- ✓ If operator designated a person, each subsequent driver may accept (co-sign) or refuse it
- ✓ A driver who refuses must perform a new check and fill out another report
- ✓ If a driver regains control of a vehicle already checked within previous 24 hours, no new report is needed but the initial report must be on board and accurately reflect the vehicle's condition

150.2 Buses, Minibuses, Tow Trucks and Team Driver Rules

Special co-signing rules allow successive or relief drivers of buses, minibuses, tow trucks, and motor coaches to accept another driver's check.

- ✓ For buses, minibuses, tow trucks and emergency vehicles (except fire dept), successive drivers may co-sign a check even if done by a non-designated driver
- ✓ A driver who co-signs assumes responsibility and must keep the report updated
- ✓ For team drivers with no designation, each driver does their own check; both reports remain valid 24 hours
- ✓ For a motor coach driven by a team, the relief driver may co-sign the first driver's report even if the first driver was not designated by the operator

CHAPTER 151

10 - Doors and Other Openings

151.1 Cab Doors

Check the driver's side door opens without difficulty and all cab doors engage completely when closed. Open and close the driver's side door from outside and inside. Sleeper berth doors are not included. Applying pressure or re-closing may confirm engagement.

- ✓ Defect 10.A (major): One of the cab doors does not engage completely
- ✓ Defect 10.1 (minor): The driver's side door does not open or is difficult to open from both inside and outside
- ✓ Only doors for passenger boarding are covered; sleeper berth doors are excluded

151.2 Bus Emergency Exits and Warning Devices

For buses and motor coaches, check that emergency exits (doors, windows, roof hatch) are accessible and open the emergency doors to confirm the warning buzzer or light works. Any object hampering access to an emergency exit is an obstruction.

- ✓ Defect 10.B (major): The emergency exit is obstructed
- ✓ Defect 10.C (major): An emergency door is inadequate or the warning buzzer/light is inoperative (major as soon as a warning device fails)

151.3 Bus Emergency Exits

For buses and motor coaches, check that emergency exits (doors, windows, roof hatch) are accessible and open the emergency doors to confirm the warning buzzer or light works.

- ✓ Major defect (10.B): the emergency exit is obstructed by any object or installation hampering access
- ✓ Major defect (10.C): an emergency door is inadequate or the warning buzzer/light is inoperative

CHAPTER 152

Chapter 12 - Special Cases for Circle Check Validity

152.1 Heavy Vehicles Subject to Road Tests After Repairs

A circle check may not be required for post-repair road tests if all specific conditions are met.

- ✓ Road test must be within a 15 km radius from the repair location
- ✓ Vehicle must not transport goods (other than permanent equipment)
- ✓ Vehicle must not transport passengers (other than those involved in the road test)
- ✓ The most recent circle check report or the work order must be on board

152.2 Fire Department Vehicle Circle Check Rules

Fire department vehicles have specific inspection timing tied to outings and station stays.

- ✓ A circle check must be performed during the 24 hours preceding an outing or upon return to the station
- ✓ When a vehicle remains in the station, an inspection must be conducted at least once every 7 days

152.3 Buses, Minibuses and Emergency Vehicles Validity Exception

For these vehicles that remain parked, weekend and holiday days do not count toward the 24-hour validity period.

- ✓ For these vehicles remaining parked, Saturdays, Sundays and statutory holidays do not count in the 24-hour validity period
- ✓ This exception applies only to buses, minibuses and emergency vehicles (except fire department vehicles)

152.4 Urban Transit Bus/Minibus Validity Period

Public transit buses/minibuses have a dual validity period whose earliest expiry governs, subject to specific conditions.

- ✓ Valid 48 hours if the vehicle remains parked and indoors during this period
- ✓ Valid 24 hours starting from when it is put into operation, whichever elapses first
- ✓ Applies only if the circle check is carried out by a person designated by the operator for urban transit buses/minibuses operated by a public transit authority
- ✓ Saturdays, Sundays and statutory holidays do not count in the 48-hour period when parked indoors

CHAPTER 153

Types of Heavy Vehicles

153.1 Heavy Vehicle Configurations

Heavy vehicles come in many configurations designed for varied uses, including single-unit and combination vehicles as well as passenger buses.

- ✓ Single-unit types include the straight-body truck
- ✓ Combination types include tractor semi-trailer, truck-trailer and double road train
- ✓ Bus types include city bus, school bus and motor coach (intercity bus)

CHAPTER 154

Appendix – Laws and Regulations

154.1 Governing Laws and Regulations for Heavy Vehicles

Heavy vehicle operation is governed by key laws including the Act respecting owners, operators and drivers of heavy vehicles, the Highway Safety Code, and the Transport Act, plus numerous regulations covering cargo, hours of service, load limits, and driver health.

- ✓ Key laws: Act respecting owners, operators and drivers of heavy vehicles; Highway Safety Code; Transport Act
- ✓ Key regulations include Cargo Securement Standards, Vehicle Load and Size Limits, Regulation respecting hours of driving and rest, and Special Road Train Operating Permits

CHAPTER 155

Dashboard Indicators

155.1 Monitoring Dashboard Indicators

While operating your vehicle, constantly monitor its performance. You need to be familiar with all dashboard indicators, buttons and levers to drive safely and efficiently, since dashboards differ across vehicle types.

- ✓ Regularly check gauges and indicators to be immediately informed of any defect or malfunction posing a hazard
- ✓ Before setting out, make sure you can locate all indicators and operate all buttons and levers
- ✓ Key controls include trailer air supply, windshield wiper/washer, semi-trailer hand brake, parking brake and gear shift

155.2 Important Dashboard Gauges

Some indicators and gauges are more important than others and need to be checked or used more frequently.

- ✓ Key indicators include fuel gauge, coolant temperature gauge, speedometer and low pressure gauge
- ✓ Additional important gauges include engine oil pressure, primary and secondary circuit air pressure, exhaust heat gauge, tachometer and voltmeter

155.3 Key Gauges to Check

Beyond basic indicators, several gauges are important for monitoring vehicle systems, especially air-brake-related pressures on heavy vehicles.

- ✓ Monitor the engine oil pressure gauge
- ✓ Monitor the primary and secondary circuit air pressure gauge and the low pressure gauge
- ✓ Monitor the exhaust heat gauge, tachometer and voltmeter

CHAPTER 156

Trailer Brake Hoses (Chapter 4)

156.1 Colour-Coded Trailer Brake Hoses

Brake hoses carry compressed air between adjacent vehicles. Red hoses generally supply air to the service brake chambers (via service reservoir) and release the parking brake; blue hoses activate the trailer/semi-trailer relay valve which allows air into the service brake chambers.

- ✓ Red hoses: supply service brake air and release parking brake
- ✓ Blue hoses: activate the relay valve for service brakes
- ✓ Connect couplers of the same colour together

156.2 Connecting Brake Hose Couplers

Each hose ends in a coupler; hitched vehicles have two couplers each. Match corresponding couplers of the same colour. To connect, fit couplers at a 90° angle and rotate until hoses line up straight.

- ✓ Connect corresponding same-colour couplers
- ✓ Match tractor service coupler to semi-trailer service coupler
- ✓ Fit couplers at 90° and rotate until hoses are straight
- ✓ Match parking/emergency circuit couplers the same way

156.3 Unhitched Tractor Hose Handling

If a road tractor is not hitched to a trailer, each brake hose coupler must be hooked to a dummy coupler. If no dummy couplers exist, attach couplers side by side and secure them to prevent hoses falling and dirt entering the system.

- ✓ Hook each coupler to a dummy coupler when not hitched
- ✓ If no dummy couplers, secure couplers side by side
- ✓ Prevents hoses dragging and dirt entering the system

156.4 Red and Blue Brake Hoses

Red brake hoses supply air to service brake chambers (via the service reservoir) and release the parking brake. Blue brake hoses supply air to activate the trailer/semi-trailer relay valve, which lets air into the service brake chambers.

- ✓ Red hoses supply the service brakes and release the parking brake
- ✓ Blue hoses activate the trailer relay valve for service braking
- ✓ Colours identify which circuit each hose serves

156.5 Handling Unused Couplers

If a road tractor is not hitched to a trailer, hook each coupler to a dummy coupler. If there are no dummy couplers, attach the hose couplers side by side and secure them to keep hoses off the ground and dirt out of the system.

- ✓ Attach unused couplers to dummy couplers when not hitched
- ✓ Without dummies, secure couplers side by side on the vehicle
- ✓ Prevents dirt entering the system and hoses dragging

CHAPTER 157

Supplemental Brakes

157.1 Transmission and engine compression for downhill braking

Before descending a steep grade, shift into a gear that maintains control. Manufacturers state the greatest engine braking effect is in first gear, and general practice is to shift into first before starting down a steep grade, staying in that gear all the way down. The lowest appropriate gear provides engine compression that helps control speed — effective with standard or automated manual transmission.

- ✓ Greatest engine braking effect is in first gear; shift down before descending a steep grade
- ✓ Stay in the selected low gear all the way down
- ✓ Engine compression works with both standard and automated manual transmissions

157.2 Transmission and Engine Compression Downhill

Before a steep grade, shift into a gear that maintains speed control. Manufacturers state the greatest engine braking effect comes in first gear; general practice is to shift into first before a steep grade and stay there all the way down. Engine compression works with standard or automated manual transmission.

- ✓ Shift into the controlling gear before the steep grade, not during
- ✓ Greatest engine braking effect is in first gear (general practice on steep grades)
- ✓ Stay in the chosen low gear all the way down
- ✓ Engine compression is effective with standard or automated manual transmission

157.3 Using supplemental brakes

When loaded, supplemental brakes help maintain desired speed without overusing service brakes. Ensure they work before starting downhill by activating the switch and releasing the accelerator. Supplemental brakes are most effective when the engine turns at maximum RPM for a given gear. At the bottom of the hill, increase speed and shift to the appropriate gear.

- ✓ Check the supplemental brake works before descending by activating the switch and releasing the accelerator
- ✓ Supplemental brakes are most effective at maximum engine RPM for a given gear
- ✓ Supplemental brakes reduce reliance on service brakes when loaded

157.4 Automated manual transmission

Automated manual transmission functions like manual but is electronically synchronized, downshifting or holding gear only when there's no risk of mechanical failure. You can select a lower gear than the highest automatically chosen gear to gain engine compression when descending; this prevents automatic upshifts. Watch engine RPM to avoid over-revving. On steep or slippery grades, a lower gear prevents frequent or unplanned gear changes.

- ✓ Automated manual transmission only downshifts/holds gear when there's no mechanical failure risk
- ✓ Select a lower gear for engine braking downhill and watch RPM to avoid over-revving
- ✓ Choosing a lower gear prevents unplanned shifts on steep or slippery grades

157.5 Using Supplemental Brakes

Supplemental brakes help maintain desired speed without overusing service brakes, especially when loaded. Check they work before descending by activating the switch and releasing the accelerator. They are most effective when the engine is turning at maximum RPM for a given gear. At the hill's bottom, increase speed and shift to the appropriate gear.

- ✓ Supplemental brakes reduce reliance on service brakes when loaded
- ✓ Check supplemental brakes work before starting downhill
- ✓ Supplemental brakes are most effective at maximum RPM for a given gear
- ✓ Activate the switch and release the accelerator to engage

157.6 Automated Manual Transmission

Automated manual transmission functions like manual but is electronically synchronized to downshift or hold gear only when there is no risk of mechanical failure. You can select a lower gear than the highest automatic gear for engine compression when descending—useful on steep or slippery grades—but watch that engine RPM does not get too high.

- ✓ Automated manual transmission downshifts/holds gear only if no mechanical failure risk
- ✓ You can manually select a lower gear for engine compression when descending
- ✓ Choosing a lower gear prevents unplanned upshifts on grades
- ✓ Watch engine RPM does not get too high in a lower gear

CHAPTER 158

Chapter 12 – When Should the Circle Check Be Performed

158.1 General 24-Hour Circle Check Rule

Drivers must ensure an inspection was performed within 24 hours before driving, with a new one required if not done by a designated person.

- ✓ Drivers must ensure an inspection was performed within the 24 hours prior to driving
- ✓ A new inspection is required if the check was not done by a person designated by the operator, even if fewer than 24 hours have elapsed
- ✓ Drivers must plan activities to perform a new check before 24 hours elapse, except for certain vehicles with different limits

158.2 Special Cases for Check Timing

Certain vehicle types have alternate validity rules including road tests after repairs, fire vehicles, buses, and transit vehicles.

- ✓ No check required for a road test after repairs if within 15 km radius, no goods, no passengers (except test personnel), and the last report or work order is on board
- ✓ Fire department vehicles need a check within 24 hours before an outing or on return; if in station, at least once every 7 days
- ✓ For buses, minibuses and emergency vehicles (except fire), Saturdays, Sundays and statutory holidays don't count in the 24-hour validity if parked
- ✓ Urban transit buses/minibuses: check valid 48 hours if parked indoors, or 24 hours from being put into operation, whichever elapses first (must be done by designated person)

CHAPTER 159

Brake Chambers and Brake Types (Chapter 4)

159.1 Brake Chambers and Diaphragm

There is a brake chamber near each wheel. Air from the service reservoirs pushes a diaphragm connected to a push rod. In a drum brake, the push rod operates a slack adjuster that turns a camshaft; the S-cam makes the brakes clamp. There are single chambers (service brake) and double chambers (service + parking brake).

- ✓ A brake chamber is located near each wheel
- ✓ Air pushes the diaphragm connected to the push rod
- ✓ Single chamber = service brake; double chamber = service + parking brake
- ✓ In drum brakes the push rod operates the slack adjuster and S-cam

159.2 Parking Brake Springs and Mounting

Parking brakes are mounted only on rear wheels of tractor/truck/bus (requiring double chambers on at least one axle) and on trailer/semi-trailer wheels except most auxiliary lift axles. A parking brake is always paired with a service brake and uses a powerful spring. Pulling up empties air so springs apply the brake; pushing down fills air, compresses the spring, and releases the wheels.

- ✓ Parking brakes use a powerful spring and are always paired with a service brake
- ✓ Mounted on rear wheels of tractor/truck/bus and trailer wheels
- ✓ Pull up = air out, spring applies brake; push down = air in, spring compressed, wheels free
- ✓ Spring also activates the emergency brake if a problem arises

159.3 Drum Brakes (S-Cam)

A drum brake uses brake shoes with linings pressing against the inside of a drum on the wheel. S-cam drum brakes are the most common on heavy vehicles; an S-shaped cam pulls the shoes apart. Friction produces heat; overheated linings lose effectiveness through misuse or overuse.

- ✓ Drum (S-cam) brakes are the most common on heavy vehicles
- ✓ S-shaped cam pulls the brake shoes apart against the drum
- ✓ Overheated linings lose effectiveness

159.4 Disc Brakes

A disc brake uses a disc on the hub with linings (pads) held by a caliper that rub both sides of the disc. Disc brakes are most common on motor coaches and increasingly used elsewhere. Compared to drum brakes, they use less air (smaller chamber) and their efficiency is less impaired at high temperatures.

- ✓ Disc brakes use a caliper pressing pads on both sides of a disc
- ✓ Consume less air than drum brakes
- ✓ Less likely to lose efficiency at high temperatures

CHAPTER 160

Chapter 12 - Responsibility for the Condition of the Vehicle

160.1 Obligations of Owners, Operators and Drivers

All parties involved in a vehicle's operation share responsibilities for its mechanical condition and inspection compliance.

- ✓ Owners must maintain vehicles in good mechanical condition and have reported defects repaired
- ✓ Operators must ensure the driver or designated person conducts the circle check per regulatory requirements
- ✓ Drivers must perform the circle check per requirements (unless accepting another's inspection) and report defects detected during a trip

CHAPTER 161

Appendices – List 1 Heavy Vehicles: Coupling Devices

161.1 Coupling Device Defects (List 1)

List 1 applies to heavy vehicles other than buses, minibuses or motor coaches. Coupling minor defects include missing/broken/loose fastener components and damaged/insecure safety fasteners. Major defects (some applying only when coupled) include bent kingpin/coupling plate, fifth wheel movement, and locking pin failures.

- ✓ Minor: fastener component(s) of the coupling device missing, broken or loose
- ✓ Major: coupling plate or kingpin bent, cracked, or not securely fixed
- ✓ Major: more than 20% of coupling mechanism fasteners damaged or missing
- ✓ Major: 25% or more of locking pins missing or not working
- ✓ Major: coupling mechanism not properly closed or locked

CHAPTER 162

Chapter 6 Self-Evaluation Answers

162.1 Key Dangerous Situation Facts

Reinforced exam facts: With hydroplaning, do NOT apply the brakes. A blowout in one dual wheel on a semi-trailer is NOT strongly felt. During a skid, turn the wheel in the same direction as the skid. Hydraulic brakes CAN be affected by overheating. Emergency brakes take over when air pressure in reservoirs is insufficient.

- ✓ Do not brake during hydroplaning; steer in the same direction as a skid
- ✓ A dual-wheel blowout is not strongly felt; hydraulic brakes are affected by overheating
- ✓ Emergency brakes take over when compressed air in reservoirs is insufficient

CHAPTER 163

11 - Glass and Mirrors

163.1 Windshield Condition

Sit in the driver's seat and inspect the windshield for transparency, damage, or cracks that hamper visibility while driving. Clear the dashboard and windshield of obstructing objects for best visibility.

- ✓ Defect 11.1 (minor): The windshield is tarnished, cloudy, or broken in a way that reduces the driver's vision of the road or road signs/signals
- ✓ Inspect from the driver's seat and clear obstructing objects

163.2 Outside Rearview Mirrors

For all outside mirrors, inspect mounting and check for sharp edges (pointed/cutting edges that could injure). Mandatory mirrors: every vehicle needs an outside mirror on both sides; school buses/minibuses also need a front-mounted convex outside mirror on both sides. Ensure each is adjustable and stays positioned for safe driving.

- ✓ Defect 11.3 (minor, all mirrors): An outside rearview mirror is not securely mounted or shows a sharp edge
- ✓ Defect 11.2 (minor, mandatory mirrors): A mandatory mirror is missing, broken, cracked, tarnished, or cannot be adjusted/remain in the desired position
- ✓ School buses and minibuses require front-mounted convex outside mirrors on both sides

163.3 Windshield and Side Windows

Sit in the driver's seat and inspect the windshield and side windows for transparency, damage, cracks, or obstructions that hamper visibility. School buses and minibuses must also check the side windows directly behind the driver's compartment.

- ✓ Minor defect (11.1): the windshield or a side window is tarnished, cloudy, obstructed, crazed or cracked reducing the driver's vision of the road or road signs/signals
- ✓ Minor defect (11.4, school buses/minibuses): a side window directly behind the driver's compartment reduces the driver's vision

163.4 Side Windows

Check the condition of side windows on each side of the driver's compartment from the driver's seat for transparency, damage, cracks, or obstructions (e.g. opaque stickers). School buses and minibuses must also check side windows directly behind the driver's compartment.

- ✓ Defect 11.1 (minor): A driver's compartment side window is tarnished, cloudy, obstructed, crazed, or cracked reducing driver's vision
- ✓ Defect 11.4 (minor, school buses/minibuses): A side window on either side and directly behind the driver's compartment is similarly impaired

CHAPTER 164

Laws and Regulations (Transportation of Passengers)

164.1 Hours of Driving and Circle Check Regulations for Buses

All bus drivers except urban transit are governed by the Regulation respecting hours of driving and rest, and must obey other jurisdictions' rules when travelling outside Québec. Under the Regulation respecting safety standards for road vehicles, a bus driver must perform a circle check within 24 hours before taking the bus out, or read and sign a report of a check done within the preceding 24 hours.

- ✓ Non-urban-transit bus drivers are subject to hours of driving and rest rules
- ✓ Obey other jurisdictions' regulations when travelling outside Québec
- ✓ A circle check must be done within 24 hours before taking a bus out
- ✓ If someone else did the check, the driver must read and sign the report

164.2 Enforcement Bodies and Applicable Laws

Drivers carrying passengers must know applicable laws. The principal enforcement bodies are the Société de l'assurance automobile du Québec, the Ministère des Transports du Québec, and the Commission des transports du Québec. Beyond the Highway Safety Code, passenger drivers are subject to the Transport Act, Bus Transport Regulation, and the Regulation respecting road vehicles used for transporting school children.

- ✓ Enforcement bodies: SAAQ, Ministère des Transports, Commission des transports du Québec
- ✓ The Transport Act requires school bus drivers to hold a certificate of competency
- ✓ The Bus Transport Regulation governs permits for transporting passengers by bus
- ✓ School bus manufacturing/outfitting/use standards come from a dedicated regulation

CHAPTER 165

Appendix – Pressure Conversion Table

165.1 Pressure Unit Conversions (psi, kPa, bar)

The pressure conversion table converts psi to kPa and bar, useful for interpreting brake air leak limits and tire pressures. Approximately 1 psi equals 6.9 kPa (0.07 bar).

- ✓ 1 psi ≈ 6.90 kPa ≈ 0.07 bar; 5 psi ≈ 34.5 kPa (relevant to a 35 kPa air leak limit)
- ✓ Use the table to convert brake air leak thresholds and tire pressures between imperial and metric units

CHAPTER 166

How Service Brakes Work (Chapter 4)

166.1 Air Brake Reaction Time

Air brakes react more slowly than hydraulic brakes because air is compressible. Valves (including the relay valve) keep air on standby to reduce reaction time. It takes about one-half second for air to pass through the system; at 90 km/h a vehicle covers 12.5 m during this time.

- ✓ Air brakes react slower than hydraulic brakes (air compressible)
- ✓ Relay valve keeps air on standby to reduce reaction time
- ✓ Takes ~0.5 second for air to pass through the system
- ✓ At 90 km/h vehicle travels 12.5 m in that half-second

166.2 Compressed Air Circulation and Amplification

The compressor draws in outside air, sends it through an air dryer to the supply reservoir, then to service reservoirs. Pressing the brake pedal sends air to each brake chamber, exerting force against drums or discs. The system uses air force with the lever principle to amplify a slight pedal pressure into strong braking.

- ✓ Air path: compressor → air dryer → supply reservoir → service reservoirs → brake chambers
- ✓ Slight pedal pressure amplifies into large braking force
- ✓ Uses air force combined with lever principle

166.3 Drum vs Disc Brake Application

On drum brakes the diaphragm moves the push rod which operates the slack adjuster, rotating the S-cam to pull shoes apart against the drum. On disc brakes the diaphragm pushes a lever exerting force via a piston on a pad; a counterforce moves the caliper pushing the opposing pad against the disc.

- ✓ Drum: diaphragm → push rod → slack adjuster → S-cam → shoes clamp drum
- ✓ Disc: diaphragm → lever → piston → pad, caliper pushes opposing pad
- ✓ Both stop the wheel from turning freely

166.4 Factors Affecting Braking Power

Braking power results from several mechanical factors combined. There is a limit to braking capacity set by the maximum air pressure the service reservoirs can supply and, for drum brakes, proper slack adjuster adjustment.

- ✓ Factors: compressed air pressure, brake chamber size, slack adjuster length, cam rotation (drum)
- ✓ Braking capacity limited by max reservoir air pressure
- ✓ Drum brake capacity also limited by proper slack adjuster adjustment

166.5 Simultaneous Trailer Braking

The semi-trailer's service brakes operate at the same time as the tractor's. Pressing the brake pedal activates brakes on all of the vehicle combination's wheels.

- ✓ Semi-trailer service brakes operate at the same time as the tractor's
- ✓ Brake pedal activates all wheels in the combination

166.6 Compressed Air Circulation

The compressor draws in outside air, sends it through an air dryer to the supply reservoir, then to the service reservoirs. Pressing the brake pedal sends air to each wheel's brake chamber, driving the shoes against the drums or discs. Even slight pedal pressure yields large braking force through amplification.

- ✓ Air path: compressor → dryer → supply reservoir → service reservoirs → brake chambers
- ✓ Pedal pressure sends air to each wheel's brake chamber
- ✓ The system amplifies the driver's pedal force

166.7 Drum vs Disc Brake Operation

In a drum brake the diaphragm pushes the push rod which operates the slack adjuster, rotating an S-cam via a camshaft to spread the shoes against the drum. In a disc brake the diaphragm pushes a lever that forces a pad against the disc, with an equal counterforce moving the caliper to press the opposing pad.

- ✓ Drum: diaphragm → push rod → slack adjuster → S-cam spreads shoes
- ✓ Disc: diaphragm → lever forces pad; caliper presses opposing pad
- ✓ Both stop the wheel from turning freely

166.8 Simultaneous Tractor and Trailer Braking

The semi-trailer's service brakes operate at the same time as the tractor's, so pressing the brake pedal brakes all wheels of the combination.

- ✓ Semi-trailer service brakes operate at the same time as tractor's
- ✓ Pressing the brake pedal brakes all wheels of the combination

CHAPTER 167

12 - Wheels, Hubs and Fasteners

167.1 Wheels (Disc and Spoke)

Only wheels on weight-bearing axles must be checked (auxiliary lift axle recommended). Inspect visible parts: on spoke wheels the spokes, discs, and rims; on disc wheels the entire wheel, especially around the bolts.

- ✓ Defect 12.C (major): A wheel is cracked, broken, or shows indication of repair or welding
- ✓ Defect 12.C (major): One of the stud holes is widened or oval-shaped

167.2 Wheel Fasteners

Check the presence and condition of wheel fasteners (bolts, wheel rim clamps, wheel studs and nuts) around the vehicle.

- ✓ Defect 12.B (major): A wheel fastener is missing, cracked, broken, or not securely fixed
- ✓ Inspect bolts, rim clamps, studs, and nuts around the vehicle

167.3 Wheel Bearings and Lubrication

Check for leaks and oil level in wheel hubs. Check lubricant through the hub sight glass if equipped (do not remove the filler cap). Check for oil/grease traces on wheels or the ground. Insufficient lubricant can cause the wheel to come off. Leaks may be caused by a broken/missing plug, filler cap, or axle cap, or a damaged seal.

- ✓ Defect 12.A (major): Wheel bearing lubricant is not visible through a sight glass, or is absent regardless of sight glass
- ✓ Defect 12.1 (minor): Lubricant below minimum level when visible through a sight glass; or lubricant leakage other than sweating
- ✓ Only check oil level if the hub has a sight glass; do not remove the axle cap to check

167.4 Wheel Bearings and Hub Lubrication

Check for leaks (seals) and oil level in the wheel hubs. Only check oil level if the hub has a sight glass (usually on steer axle and some trailer/semi-trailer wheels); do not remove the filler cap or axle cap. Check for oil/grease traces on wheels or the ground. Insufficient lubrication can cause a wheel to come off.

- ✓ Major defect (12.A): wheel bearing lubricant is not visible through a sight glass, or lubricant is absent regardless of sight glass
- ✓ Minor defect (12.1): lubricant is below minimum when visible through a sight glass, or there is lubricant leakage other than sweating

167.5 Spare Wheel Support and Fasteners

Check the solidity of the spare wheel support and fasteners behind the cab or under the vehicle. You need not go underneath — just visually confirm the support appears to securely hold the spare wheel.

- ✓ Defect 12.2 (minor): The spare tire support or fasteners cannot retain the solidly fixed spare wheel
- ✓ A visual check of the support is sufficient; going under the vehicle is not required

CHAPTER 168

Liquids in Tank Trucks

168.1 Driving with Partly Filled Tanks

Liquid movement combined with a high centre of gravity creates special driving conditions. When a tank is only partly filled, sudden steering or braking directly affects vehicle control.

- ✓ Avoid sudden steering or braking movements when a tank is only partly filled
- ✓ Liquid movement in a partly filled tank can directly affect control of the vehicle

168.2 Temperature Effects and Fill Limits

Liquid density and temperature must be considered when filling to comply with the manufacturer's maximum load on the certification plate. Some liquids expand and dense liquids like sulfuric acid can exceed weight limits.

- ✓ Never fill a tank to more than 70% of its capacity
- ✓ Account for liquid density and temperature to comply with the certification plate load limit
- ✓ Dense liquids such as sulfuric acid can cause the vehicle to exceed authorized weight limits

168.3 Displacement of Liquids and Baffles

When braking, liquid forms a wave that travels forward, strikes the tank front and rebounds rearward, exerting thrust. Baffles (perforated walls) reduce front-to-back surge but side-to-side displacement can still overturn the vehicle.

- ✓ Braking creates a forward liquid wave that exerts thrust on the tank ends
- ✓ Baffles reduce fore-aft surge but do NOT prevent side-to-side displacement that can overturn the vehicle
- ✓ Reduce speed well below the maximum limit, especially in slippery conditions and on curves/exits/turns

168.4 Distribution of Liquids in a Tank

In multi-compartment tanks, liquid must be distributed evenly in each compartment, with balanced front-to-rear weight for safe loading and unloading.

- ✓ Distribute liquid evenly in each compartment of a multi-compartment tank
- ✓ Avoid placing too much weight at the front or the rear

CHAPTER 169

Chapter 12 - Mechanical Defects: Minor and Major

169.1 Minor Defect Definition and Rules

A minor defect does not pose an immediate safety risk but can worsen, requiring repair within a set timeframe.

- ✓ A minor defect does not pose an immediate risk to driver or road user safety but could deteriorate quickly
- ✓ A vehicle with a minor defect cannot be operated if repairs are not performed within 48 hours

169.2 Major Defect Definition and Rules

A major defect poses an immediate safety risk and results in an absolute prohibition from operation.

- ✓ A major defect poses an immediate risk to safety
- ✓ It is prohibited to operate or allow operation of a vehicle with a major defect

169.3 When to Report Minor and Major Defects

Reporting timelines differ for minor versus major defects, with major defects requiring immediate action.

- ✓ A minor defect must be recorded and notified to the operator before the next circle check or within 24 hours, whichever comes first
- ✓ A major defect must be immediately recorded and reported without delay to the operator
- ✓ A major defect constitutes a prohibition from operation — the vehicle may not be driven or put into operation

CHAPTER 170

Appendices – List 1: Frame, Controls, Steering

170.1 Steering System Defects

Minor steering defects include misplaced steering column/adjustable wheel not staying set, incorrect power steering fluid level, and a cut pump belt. Major defects include steering column/wheel misplacement showing separation risk and inoperative power steering.

- ✓ Minor: incorrect power steering fluid level; pump belt cut
- ✓ Major: steering column/wheel misplacement showing risk of separation
- ✓ Major: power steering inoperative

170.2 Frame and Cargo Body Defects

Minor defects include cracked side rails or cross members and missing/insecure fixed body components. Major defects include side rails that might break, sagging that makes mobile parts touch the body, and more than 25% of sliding bogie locking pins missing or not engaged.

- ✓ Minor: side rails cracked or cross members cracked/broken
- ✓ Major: side rails might break
- ✓ Major: more than 25% of sliding bogie locking pins missing or not engaged

170.3 Driver Controls Defects

Minor defects include an improperly operating accelerator or clutch and a horn not operating properly. A major defect is when the engine fails to return to idle when the accelerator is released.

- ✓ Minor: accelerator or clutch not operating properly; horn not working
- ✓ Major: engine fails to return to idle when accelerator is released

CHAPTER 171

Steering Wheel

171.1 Proper Hand Position and Steering Technique

Because heavy vehicles are much bigger than other vehicles, expert and safe operation is essential. Hold the steering wheel with both hands positioned far enough apart to maintain firm control and react quickly.

- ✓ Hold the steering wheel with both hands and vary your position for comfort
- ✓ Keep hands far enough apart to maintain firm steering control and react quickly
- ✓ For special turning techniques, sit well back with arms bent, starting at the 8 o'clock/4 o'clock position and hand-over-hand shuffling until wheels are turned

171.2 Proper Hand Position on the Steering Wheel

Driving a heavy vehicle requires special skills since these vehicles are much larger. Hold the wheel with both hands and vary your position for comfort while keeping hands far enough apart for firm control. Some models require a special turning technique due to steering wheel size or configuration.

- ✓ Hold the steering wheel with both hands and keep them far enough apart to maintain firm control
- ✓ Sit well back in your seat and keep your arms bent when turning the wheel
- ✓ Start turns with hands at the 8 o'clock/4 o'clock position using a hand-over technique
- ✓ React quickly to maintain firm steering control no matter what happens

CHAPTER 172

Pulling Over to the Side of the Road

172.1 Stopping on the roadside and hazard lights

When pulling over, turn on hazard lights, especially at night so other drivers don't mistake your stopped vehicle as moving and follow you. In a breakdown, also use flares or red reflectors to show the vehicle is stopped and replace flares when they burn out to keep a continuous signal.

- ✓ Turn on hazard lights when pulling over, especially at night
- ✓ In a breakdown, use flares or red reflectors and replace burned-out flares
- ✓ Flares are prohibited when carrying flammable, explosive or dangerous materials (fuel, paint thinners, propane, dynamite)

172.2 Warning signals on a secondary road

On a secondary road, place warning signals: first about 3 m behind the vehicle in line with its left side; second about 30 m behind in line with the first; third about 30 m ahead of the vehicle in line with its left side.

- ✓ First signal ~3 m behind, in line with the left side of the vehicle
- ✓ Second signal ~30 m behind, in line with the first
- ✓ Third signal ~30 m ahead of the vehicle, in line with the left side

172.3 Warning signals on a highway

On a highway, one-way road or thoroughfare with no oncoming traffic, place warning signals: first about 3 m behind in line with the left side; second about 30 m behind in line with the first; third about 60 m behind in line with the others.

- ✓ First signal ~3 m behind, in line with the left side
- ✓ Second signal ~30 m behind, in line with the first
- ✓ Third signal ~60 m behind, in line with the others (all behind the vehicle)

172.4 Stopping at the Roadside

When pulling over, turn on hazard lights—especially at night—so other drivers don't think you are still moving and try to follow. In a breakdown, also use flares or red reflectors to show the vehicle is stopped, replacing flares as they burn out. Flares are prohibited if carrying flammable, explosive or dangerous materials (fuel, paint thinners, propane, dynamite).

- ✓ Turn on hazard lights when pulling over, especially at night
- ✓ In a breakdown, use flares or red reflectors in addition to hazard lights
- ✓ Replace flares as they burn out to maintain a continuous warning
- ✓ Flares are prohibited when carrying flammable/explosive/dangerous materials

172.5 Warning Signals on a Secondary Road

On a secondary road, place warning signals as: first signal about 3 m behind the vehicle in line with the left side; second signal about 30 m behind in line with the first; third signal about 30 m ahead of the vehicle in line with the left side.

- ✓ First signal 3 m behind, in line with the left side of the vehicle
- ✓ Second signal 30 m behind, in line with the first signal
- ✓ Third signal 30 m ahead of the vehicle, in line with the left side

172.6 Warning Signals on a Highway

On a highway, one-way road or thoroughfare with no oncoming traffic, place signals as: first about 3 m behind in line with the left side; second about 30 m behind in line with the first; third about 60 m behind in line with the others.

- ✓ First signal 3 m behind, in line with the left side
- ✓ Second signal 30 m behind, in line with the first
- ✓ Third signal 60 m behind on a highway (no oncoming traffic), in line with the others

CHAPTER 173

Transportation of Passengers – Laws and Regulations

173.1 Governing Bodies and Applicable Laws

Passenger-carrying drivers must know applicable laws enforced by the SAAQ, Ministère des Transports du Québec, and Commission des transports du Québec. Beyond the Highway Safety Code, they are subject to the Transport Act, Bus Transport Regulation, and the Regulation respecting road vehicles used for transporting school children.

- ✓ Enforcement bodies: SAAQ, Ministère des Transports, Commission des transports du Québec
- ✓ The Transport Act requires school bus drivers to hold a certificate of competency
- ✓ The Bus Transport Regulation governs issuing of passenger-transport permits

173.2 Hours of Driving/Rest and Circle Check Rules for Buses

All bus drivers except urban transit are governed by the Regulation respecting hours of driving and rest, and must follow rules of other jurisdictions when travelling outside Québec. A bus driver must perform a circle check within 24 hours before taking a bus out, or read and sign the previous circle check report if done within the preceding 24 hours.

- ✓ All bus drivers except urban transit follow the hours of driving and rest regulation
- ✓ A circle check must be performed within 24 hours before taking a bus out
- ✓ A driver may read and sign a previous circle check report if done within the preceding 24 hours

CHAPTER 174

Chapter 12 – Responsibility and Reporting of Defects

174.1 Responsibility for Vehicle Condition

Owners, operators, and drivers each have distinct obligations to keep the vehicle in safe mechanical condition.

- ✓ Owners must maintain vehicles in good mechanical condition and have reported defects repaired
- ✓ Operators must ensure the driver or designated person conducts the check per regulatory requirements
- ✓ Drivers must perform the check per requirements (unless accepting another's inspection) and must report defects detected during a trip

174.2 Driver Responsibility to Report Trip Defects

Drivers are always responsible for detecting and reporting defects during a trip, even if someone else performed the circle check.

- ✓ Drivers are always responsible for reporting defects noted during a trip, even if another person performed the check
- ✓ Drivers must be able to carry out an inspection and recognize defects normally detected during a circle check
- ✓ Drivers must remain vigilant as they are best positioned to detect unusual vehicle behaviour

CHAPTER 175

Appendix – Self-Evaluation Answer Key (Chapter 12)

175.1 Chapter 12 Self-Evaluation Answers and Key Concepts

The answer key confirms testable circle check rules: the driver need not personally perform the check; a 35 kPa air leak in one minute on a motor coach is NOT minor (it is a major defect for a single-unit vehicle); adjacent front tire tread wear at the indicator prohibits operation; minor defects during a trip still must be recorded; and the driver must check power steering fluid.

- ✓ A 35 kPa/minute air leak on a single-unit motor coach exceeds the minor threshold and constitutes a major defect (answer: False to 'minor')
- ✓ Front steering axle wear on 2 adjacent treads level with the indicator means you cannot operate the vehicle (answer: True)
- ✓ The driver must record minor defects found during a trip and must check the power steering fluid level (both statements False)

CHAPTER 176

Number of Passengers

176.1 Passenger Limits for School and Non-School Buses

The Highway Safety Code sets maximum passengers per bus. On a school bus, the number allowed equals the number of seating positions, with no more than three school children per seat and sufficient space for each child without blocking the aisle. For non-school buses outside urban areas (e.g., chartered), the limit equals seating positions plus one standing passenger per row of seats. For urban buses (mass transit), the Code sets no passenger limit.

- ✓ School bus: passengers equal seating positions; maximum three children per seat
- ✓ Children must not block the aisle and must be seated safely
- ✓ Non-urban buses: seating positions plus one standing passenger per row (e.g., 15 rows = 15 standing max)
- ✓ Urban/mass transit buses: no limit on passengers

176.2 Passenger Limits for School and Other Buses

The Highway Safety Code sets maximum passengers. For school buses, allowed passengers equal the number of seating positions; no more than three school children per seat, with enough space so each child is seated safely without blocking the aisle. For non-school buses outside urban areas (chartered), the max is seating positions plus one standing passenger per row of seats. For urban buses (mass transit), there is no passenger limit.

- ✓ School bus: passengers equal seating positions; max 3 children per seat
- ✓ Chartered/non-urban bus: seating positions plus one standing passenger per row of seats
- ✓ Urban/mass transit bus: no limit on number of passengers

CHAPTER 177

Braking Power (Chapter 4)

177.1 Weight and GVWR Effect on Braking

Braking power depends on vehicle weight and speed. Brakes are designed to work efficiently within the gross vehicle weight rating (GVWR) — vehicle weight plus load. Exceeding GVWR reduces brake performance and increases wear.

- ✓ Two factors influence braking power: weight and speed
- ✓ GVWR = vehicle weight + load
- ✓ Exceeding GVWR reduces performance and wears brakes faster
- ✓ Never exceed the vehicle's maximum authorized load — brakes could fail completely

177.2 Effect of Doubling Weight

Doubling the total vehicle weight doubles the stopping/braking distance if the same brake pressure is applied. Doubling brake pressure keeps the same distance but doubles the heat. Reduce speed or increase stopping distance to avoid overheating.

- ✓ Double weight = double stopping distance at same brake pressure
- ✓ Double pressure keeps distance but doubles heat
- ✓ Reduce speed or increase distance to prevent overheating

177.3 Effect of Speed on Braking (Squared)

Speed is even more important than weight because braking power required is proportionate to the square of the speed increase. Doubling speed quadruples the braking power required and generates four times more heat.

- ✓ Braking power required is proportional to the square of speed
- ✓ Double speed = 4x braking power required
- ✓ Double speed = 4x more brake heat
- ✓ Speed matters more than weight/load

177.4 Combined Weight and Speed Effect

If both weight and speed double, it takes eight times more braking power to stop. Excessive braking creates more heat than drums/discs can absorb, glazing the linings and reducing effectiveness until they cool.

- ✓ Both weight and speed doubled = 8x braking power needed
- ✓ Excess heat glazes linings and reduces effectiveness
- ✓ Glazing improves once linings cool down

177.5 Other Factors Affecting Brake Performance

Brake performance depends on more than brake power. Brake adjustment, type and condition of linings, tire condition, road grade, road surface, and vehicle aerodynamics all have an impact.

- ✓ Brake adjustment affects performance
- ✓ Lining type and condition matter
- ✓ Tire condition, road grade, surface, and aerodynamics also affect braking

177.6 Weight, GVWR and Braking Distance

Braking power required depends on weight and speed. Brakes are designed to be efficient up to the gross vehicle weight rating (GVWR), the manufacturer's maximum of vehicle plus load. Exceeding GVWR reduces performance and increases wear. Doubling the load doubles braking distance at the same air pressure; doubling the pressure keeps distance but doubles heat. Never exceed maximum authorized load — brakes could fail completely.

- ✓ Two factors affect braking power: weight and speed
- ✓ Do not exceed GVWR (vehicle + load maximum)
- ✓ Doubling load doubles braking distance at same pressure
- ✓ Exceeding maximum authorized load can cause total brake failure

177.7 Speed and Squared Braking Power

Speed matters more than weight because braking power is proportionate to the square of the speed increase. Doubling speed quadruples the braking power needed and generates four times the heat. Doubling both weight and speed requires eight times more braking power.

- ✓ Braking power is proportional to the square of speed increase
- ✓ Doubling speed requires four times the braking power and heat
- ✓ Doubling both weight and speed requires eight times the braking power

177.8 Brake Overheating and Glazing

Excessive braking creates more heat than drums and discs can absorb, causing linings to glaze and lose effectiveness; this reverses once linings cool. Reduce heat by decreasing speed or increasing stopping distance. Performance also depends on brake adjustment, linings, tires, road grade and surface, and aerodynamics.

- ✓ Excessive heat glazes linings and reduces effectiveness
- ✓ Glazing disappears when the linings cool down
- ✓ Reduce heat by lowering speed or increasing stopping distance

CHAPTER 178

Chapter 12 – Mechanical Defects: Minor and Major

178.1 Minor Defect Definition and Rules

A minor defect does not pose immediate risk but can deteriorate; the vehicle cannot be operated if not repaired within a set time.

- ✓ A minor defect does not pose an immediate risk to safety but could deteriorate quickly
- ✓ A vehicle with a minor defect cannot be operated if repairs are not performed within 48 hours
- ✓ Minor defect must be recorded in the report and notified to the operator before the next circle check or within 24 hours, whichever comes first

178.2 Major Defect Definition and Rules

A major defect poses an immediate safety risk and legally prohibits operation of the vehicle.

- ✓ A major defect poses an immediate risk to safety
- ✓ It is prohibited to operate or allow operation of a vehicle with a major defect
- ✓ A major defect must be immediately recorded in the report and reported without delay to the operator
- ✓ A major defect constitutes a prohibition from operation

CHAPTER 179

13 - Seat

179.1 Driver's Seat Belt

Check presence, condition, and working order of the driver's seat belt (anchorages, buckle, retractor, locking mechanism). Buckle and unbuckle to confirm proper working order.

- ✓ Defect 13.A (major): The driver's seat belt is missing, modified, or inadequate
- ✓ A seat belt is inadequate if it is not in proper working order

179.2 Driver's Seat

Check general condition and adjustment of the driver's seat. Sit in it, make needed adjustments for safe driving, and confirm the seat remains locked in position after adjustment. A seat is inadequate if not in proper working order to the point of being unsafe.

- ✓ Defect 13.1 (minor): The driver's seat is inadequate or does not remain locked in position
- ✓ A seat is inadequate if it is not in proper working order to the point of being unsafe

CHAPTER 180

Level Crossings

180.1 Approaching Level Crossings

Be cautious at level crossings—track signs may be obscured by snow, weeds or branches. Heavy vehicles take longer to cross due to size and cargo. Avoid changing gears while crossing; an error or stall can be disastrous. Risk is greater for buses due to passenger safety. Bus drivers and dangerous goods carriers have special rules (Chapters 7 and 8).

- ✓ Track warning signs may be obscured by snow, weeds or branches
- ✓ Heavy vehicles take longer than other vehicles to cross tracks
- ✓ Avoid changing gears while crossing tracks—an error or stall can be disastrous
- ✓ Bus drivers and dangerous goods carriers are subject to special crossing rules

180.2 Approaching level crossings

Be cautious at level crossings; track warning signs may be obscured by snow, weeds or branches. Heavy vehicles take longer to cross due to size and cargo. Avoid changing gears while crossing — a gear error or stall could be disastrous. The risk is greater for buses (passenger safety). Bus drivers and dangerous-goods carriers have special rules (Chapters 7 and 8).

- ✓ Avoid changing gears while travelling through a level crossing
- ✓ Watch for obscured track warning signs due to snow, weeds or branches
- ✓ Buses and dangerous-goods vehicles are subject to special level-crossing rules

180.3 Reduced-speed level crossing sign

A special warning sign means that, because of the level crossing configuration, you must reduce speed by more than 70% of the posted speed limit. For example, if the posted limit is 70 km/h, you must reduce to no more than 20 km/h before crossing.

- ✓ The special sign requires reducing speed by more than 70% of the posted limit
- ✓ At a 70 km/h posted limit, slow to no more than 20 km/h before crossing

180.4 Reduced Speed Crossing Warning Sign

A special truck warning sign means that due to the crossing configuration you must reduce speed by more than 70% of the posted speed limit. For example, at a posted limit of 70 km/h you must reduce to no more than 20 km/h before crossing.

- ✓ This sign requires reducing speed by more than 70% of the posted limit
- ✓ Example: at 70 km/h posted, reduce to no more than 20 km/h before crossing

CHAPTER 181

Appendices – List 1: Wipers, Emergency Material, Lights

181.1 Headlights and Lights Defects

A single low beam, parking, turn-indicator, brake, or plate light not turning on is a minor defect. Major defects are failure of all low-beams, and at the rear of a single-unit or last vehicle: failure of all turn-indicator, brake, or parking lights.

- ✓ Minor: one low beam, parking, turn, brake, or plate light not turning on
- ✓ Major: failure of all low-beams
- ✓ Major: rear failure of all turn-indicator, brake, or parking lights

181.2 Windshield Wiper/Washer and Emergency Material

A passenger-side wiper missing/inadequate or ineffective washer is a minor defect, while a driver-side wiper missing/inadequate is a major defect. Insecurely fixed or inaccessible first-aid kits and chemical extinguishers required by law are minor defects.

- ✓ Minor: passenger-side wiper missing/inadequate; washer ineffective
- ✓ Major: driver-side wiper missing or inadequate
- ✓ Minor: required first-aid kit or extinguisher insecure/not readily accessible

CHAPTER 182

Accelerator

182.1 Using the Accelerator

The accelerator controls vehicle speed. Smooth, gradual acceleration avoids jerking and maintains vehicle control. Proper fuel flow ensures optimal engine performance.

- ✓ Accelerate smoothly and gradually to avoid jerking the vehicle
- ✓ The sole of your shoe should lie flat against the pedal with your heel on the floor
- ✓ Accelerate gradually while gauging engine RPM, then maintain your desired speed for better control

182.2 Proper Use of the Accelerator

The accelerator controls vehicle speed. Accelerate smoothly and gradually to set the vehicle in motion without jerking. The sole of your shoe should lie flat against the pedal with your heel on the floor. Gauge engine RPM and maintain steady speed once reached.

- ✓ Accelerate smoothly and gradually to avoid causing the vehicle to jerk
- ✓ Keep the sole of your shoe flat against the accelerator pedal with your heel on the floor
- ✓ Accelerate gradually while gauging engine RPM to obtain optimal engine performance
- ✓ Once you reach your desired speed, maintain it to keep control of your vehicle

CHAPTER 183

Rules for the Road (Passenger Transport)

183.1 Picking Up and Dropping Off Passengers

Before picking up or dropping off passengers, pull over and come to a full stop on the far right-hand side of the road or in a designated area. Once stopped, do not open the door until you are sure it is safe to do so.

- ✓ Pull over and fully stop on the far right or in a designated area
- ✓ Do not open the door until it is safe to do so

183.2 Traffic Rules While Driving a Bus

Drive smoothly for passenger comfort and safety. Do not drive on if anyone leans against the outside of the bus, and ensure dropped-off passengers are not at risk of being struck. On city roads under 70 km/h, a bus has the right of way when pulling back into its lane but must still use judgment, signal, and ensure the way is clear. At level crossings, slow down, stop at least 5 m from the crossing, and do not proceed until there is room to clear it completely, unless an EXEMPT sign is posted.

- ✓ Do not drive on if anyone is leaning against the outside of the bus
- ✓ On roads under 70 km/h, a bus has right of way re-entering its lane but must signal and ensure safety
- ✓ At level crossings, stop at least 5 m away and clear the crossing completely before proceeding
- ✓ An EXEMPT sign exempts you from the level crossing stop obligation

183.3 Inspection Stations and Brake Check Areas

Buses need not stop at inspection stations unless hauling a trailer. When driving any vehicle with a total loaded mass of 3,000 kg or more, including a bus, you must pull over at a brake check area marked by a VÉRIFICATION sign, stop at the stop sign, and check the brakes yourself.

- ✓ Buses do not stop at inspection stations unless hauling a trailer
- ✓ Vehicles 3,000 kg or more must stop at VÉRIFICATION brake check areas
- ✓ Come to a full stop and check the brakes yourself

183.4 Driving on the Shoulder

Driving on the shoulder of a highway or controlled access road is only permitted if the driver took the required training course, the signage authorizes travel on that road, and traffic speed on the highway is under 50 km/h.

- ✓ Driver must have taken the required training course
- ✓ Signage must authorize travel on the shoulder
- ✓ Highway traffic speed must be under 50 km/h

CHAPTER 184

Chapter 12 - Lists of Defects and Components to Inspect

184.1 The Three Lists of Defects

There are three defect lists tailored to different vehicle types, which help classify defects as minor or major.

- ✓ List 1 – Heavy vehicles: for all heavy vehicles except those in lists 2 and 3
- ✓ List 2 – Buses: for buses (excluding motor coaches), minibuses and trailers hauled by them
- ✓ List 3 – Motor coaches: for motor coaches
- ✓ Motor coach owner not under a recognized PMP must fill out the specific inspection report every 12,000 km or every 30 days, whichever comes first

184.2 Obligation Regarding the List of Defects

The list of defects has prescribed content and must be kept on board the vehicle by both operators and drivers.

- ✓ Operators must place the applicable list of defects in each vehicle in the prescribed format (text, order and numbering cannot be modified)
- ✓ Elements may be added only to the 'Specific inspections required by the operator' section
- ✓ Drivers must ensure the list remains on board and hand it over to any peace officer who requests it

184.3 Components to Inspect During the Circle Check

The circle check covers a specified set of components; List 1 has 19 while Lists 2 and 3 add a 20th passenger-transport section.

- ✓ List 1 (heavy vehicles) has 19 components; Lists 2 and 3 have a 20th section for passenger-carrying vehicles
- ✓ The 20 components include coupling devices, frame/cargo body, steering, brakes (electric, hydraulic, pneumatic), tires, wheels/hubs/fasteners, suspension, and passenger transport
- ✓ Components not present on a vehicle need not be verified; missing parts that should be present constitute a reportable defect
- ✓ Minor defects covered by the list must be entered in the report and reported before the next check or within 24 hours

CHAPTER 185

Types of Transmissions

185.1 Automatic Transmission in Heavy Vehicles

Many heavy vehicles change gears automatically based on speed and acceleration. Unlike car automatics, heavy vehicle automatic transmissions do not have a PARK setting.

- ✓ To keep the vehicle stationary when stopped, shift into neutral (N) with engine running and apply the parking brake
- ✓ Heavy vehicle automatic transmissions have no PARK setting
- ✓ When braking or downshifting in 1st and 2nd gears, drive wheels can block on slippery roads and cause loss of control

185.2 Manual Transmissions — Synchromesh vs Non-Synchromesh

Two types of manual transmissions exist on heavy vehicles: synchromesh and non-synchromesh. Both (and certain automated manuals) have a clutch pedal.

- ✓ Synchromesh transmissions (usually 5–6 gears) allow shifting without grinding and are used on school buses and light double-axle trucks; no double-clutching needed
- ✓ Non-synchromesh transmissions (usually 8–18 gears) are used on heavy vehicles with three or more axles and high GVWR, including tractor semi-trailers
- ✓ Non-synchromesh transmissions require the double-clutching technique for safe and efficient driving

185.3 Using the Clutch Pedal

The clutch couples the engine to the transmission and transmits power to the drive wheels. Proper driving position is crucial for correct clutching.

- ✓ Raised pedal = clutch engaged (power to wheels); pressed pedal = clutch disengaged (equivalent to neutral), allowing gear shifting
- ✓ Sit so you can press the pedal far enough to fully disengage the clutch while keeping your knee slightly bent
- ✓ Avoid releasing the pedal too quickly (forcing) or too slowly (slipping/heat), resting your foot on it, or pushing it all the way to the floor when shifting

185.4 Non-Synchromesh Manual Transmission

A non-synchromesh manual transmission is used primarily on heavy vehicles with three or more axles and high gross vehicle weight rating, including tractor semi-trailers. It usually has 8 to 18 gears and requires the double-clutching technique because it has no synchromesh to prevent grinding.

- ✓ Non-synchromesh manual transmissions are used on vehicles with three or more axles and high GVWR, including tractor semi-trailers
- ✓ They usually have 8 to 18 gears
- ✓ You must use the double-clutching technique for safe and efficient driving
- ✓ Mastering double-clutching requires good timing and many hours of practice

185.5 Mechanical Gear Shift Positions

A mechanical gear shift resembles an automobile lever-type shift, with each gear position serving a specific purpose.

- ✓ N (neutral) is for starting the engine, extended idling and parking; R (reverse) requires a full stop before use
- ✓ 2 to 5 or D are forward gears for normal driving; 2 and 3 or 2 to 4 are lower gears for driving with loads
- ✓ Gear 2 is used for snow or steep grades; Gear 1 gives maximum power for very slow off-road driving; MODE switches Performance/Economy mode

185.6 Four-Position Clutch Pedal

The clutch pedal in a non-synchromesh transmission has four positions, each with a specific role essential for proper double-clutching.

- ✓ Position 1 (upper free play) prevents components constantly spinning; Position 2 (friction point) uncouples engine before changing gears
- ✓ Position 3 (lower free play) transitions from friction point to clutch brake; Position 4 (clutch brake) stops transmission components to allow shifting into 1st gear

185.7 Engine Characteristics for Shifting

To use a non-synchromesh transmission you must know your engine's key characteristics and monitor RPM when shifting.

- ✓ Know your engine's idling RPM, top speed RPM and maximum torque
- ✓ Check the tachometer/engine RPM each time you shift gears
- ✓ Example 10-gear setup: idling 650 RPM, top speed 1,800 RPM, maximum torque 1,200 RPM

185.8 Transmission Configurations and Increments

The transmission multiplies engine power and transmits it to the differential. Non-synchromesh manual transmissions typically follow two configurations with characteristic RPM increments between gears on flat terrain.

- ✓ 10 or 15 gears have an increment of approximately 300 RPM from one gear to the next on flat terrain
- ✓ 8, 13 or 18 gears have an increment of approximately 400 RPM from one gear to the next on flat terrain
- ✓ To use the double-clutching technique you must understand how to upshift and downshift

185.9 Synchromesh Manual Transmission

A synchromesh manual transmission usually has 5 or 6 gears with an internal synchromesh allowing shifting without grinding. It is used primarily on school buses and certain double-axle trucks with low gross vehicle weight rating and does not require double-clutching.

- ✓ A synchromesh manual transmission usually has 5 or 6 gears
- ✓ The internal synchromesh allows shifting without grinding
- ✓ Used primarily on school buses and certain low-GVWR double-axle trucks
- ✓ Does not require the double-clutching technique

185.10 Using the Clutch Pedal Correctly

The clutch couples the engine to the transmission and transmits power to the drive wheels. Raised = engaged (power transmitted); pressed = disengaged (equivalent to neutral, allowing gear shifts). Proper driving position is crucial and there are specific errors to avoid.

- ✓ Press the clutch pedal to disengage and shift gears; only then can you shift a manual transmission
- ✓ Sit so you can fully disengage the clutch while keeping your knee slightly bent
- ✓ Avoid releasing the clutch too quickly (forces transmission) or too slowly (causes slipping, heat and wear)
- ✓ Do not rest your foot on the clutch pedal when not in use, and do not push it all the way to the floor when shifting gears

185.11 Transmission Configurations and RPM Increments

The transmission multiplies engine power and transmits it to the differential. Most non-synchromesh manual transmissions follow one of two configurations with different RPM increments between gears on flat terrain.

- ✓ 10 or 15 gears have an increment of approximately 300 RPM from one gear to the next on flat terrain
- ✓ 8, 13 or 18 gears have an increment of approximately 400 RPM from one gear to the next on flat terrain
- ✓ The transmission multiplies engine power and transmits it to the differential

185.12 Double-Clutching Technique Example Values

The double-clutching technique requires understanding upshifting and downshifting. Example values in the study material assume a 10-gear transmission with specific engine RPM parameters.

- ✓ Example engine idling speed is 650 RPM
- ✓ Example engine top speed is 1,800 RPM
- ✓ Example engine maximum torque is 1,200 RPM
- ✓ You must understand both upshifting and downshifting to double-clutch

185.13 Electronic and Electromechanical Gear Shift

These gear shifts are operated by buttons rather than a lever and have the same positions as a mechanical gear shift plus up and down buttons.

- ✓ Up (↑) and down (↓) buttons allow manual selection of a higher or lower gear (1 to 5) depending on road conditions
- ✓ Before selecting a gear, press the MODE button to switch from automatic to manual

185.14 Automated Manual Transmission

An increasing number of heavy vehicles use automated manual transmissions that constantly monitor factors affecting gear shifting.

- ✓ The 'smart' transmission monitors road grade, vehicle weight, speed and rolling resistance
- ✓ It analyzes these factors to determine the smoothest gear transitions automatically

CHAPTER 186

How the Parking Brake Works (Chapter 4)

186.1 Parking Brake Activation

The parking brake keeps the vehicle stationary and immobilizes all wheels equipped with it. Pull up the control knob only after the vehicle is fully stopped; air empties, the spring relaxes and presses the push rod. On drum brakes the slack adjuster rotates; on disc brakes the lever presses linings against the disc.

- ✓ Pull up control knob only when fully stopped
- ✓ Air empties, spring relaxes to apply the brake
- ✓ Drum: slack adjuster rotates and squeezes brakes
- ✓ Disc: lever pushes linings against disc

186.2 Releasing the Parking Brake

Releasing the parking brake lets air flow back into the chamber, compressing the spring and freeing the wheels. Pulling the parking brake control knob locks tractor and trailer wheels and pops up the trailer air supply knob automatically; pulling only the trailer air supply locks just the trailer wheels.

- ✓ Release: air flows in, spring compresses, wheels turn freely
- ✓ Parking brake knob locks both tractor and trailer wheels
- ✓ Trailer air supply knob pops up automatically with parking brake
- ✓ Pulling only trailer air supply locks only trailer/semi-trailer wheels

186.3 Applying the Parking Brake

Once fully stopped, pull up the parking brake control knob to empty air from the parking brake so the chamber spring relaxes and presses the push rod. In drum brakes the slack adjuster rotates to squeeze the brakes; in disc brakes the lever pushes linings against the disc. Releasing lets air back in, compresses the spring, and frees the wheels.

- ✓ Only apply the parking brake once the vehicle is fully stopped
- ✓ Pull up = air exhausts, spring applies the brake
- ✓ Push down = air fills, spring compresses, wheels turn freely

186.4 Parking Brake vs Trailer Air Supply Interaction

Pulling up the parking brake control locks tractor and trailer/semi-trailer wheels and causes the trailer air supply knob to pop up automatically. Pulling up only the trailer air supply control locks just the trailer/semi-trailer wheels.

- ✓ Parking brake knob up locks all wheels and pops up the trailer air supply knob
- ✓ Trailer air supply knob up alone locks only the trailer/semi-trailer wheels

CHAPTER 187

Rules for the Road (Buses)

187.1 Picking Up and Dropping Off Passengers

Before picking up or dropping off passengers, pull over and come to a full stop on the far right-hand side of the road or in a designated area. Do not open the door until it is safe to do so.

- ✓ Come to a full stop on the far right-hand side or in a designated area
- ✓ Do not open the door until you have confirmed it is safe

187.2 Driving Rules to Protect Passengers

Drive smoothly for passenger comfort and safety, especially when starting, stopping, turning, or on bumpy roads. Do not drive on if anyone is leaning against the bus. Before driving on, ensure dropped-off passengers are not at risk of being struck. On city roads under 70 km/h, buses have right of way pulling back into their lane, but must still use good judgment, signal, and check the way is clear.

- ✓ Do not drive on if anyone is leaning against the outside of the bus
- ✓ Ensure dropped-off passengers won't be struck before driving on
- ✓ On roads under 70 km/h in city limits, buses have right of way rejoining traffic but must signal and ensure it is safe

187.3 Bus Behaviour at Level Crossings

At level crossings, slow down and ensure you can stop without endangering others. Stop at least 5 m from the crossing and do not proceed until there is enough room ahead to clear the crossing completely, regardless of traffic lights. This is only exempted where an EXEMPT sign is posted.

- ✓ Stop at least 5 m from a level crossing
- ✓ Do not proceed until there is room to fully clear the crossing
- ✓ Exempted only where an EXEMPT sign is posted

187.4 Inspection Stations and Brake Check Areas

Buses need not stop at inspection stations unless hauling a trailer. Any vehicle with a total loaded mass of 3,000 kg or more, including a bus, must pull over at a brake check area marked with a VÉRIFICATION sign, stop fully at the stop sign, and check the brakes themselves.

- ✓ Buses only stop at inspection stations if hauling a trailer
- ✓ Vehicles ⩾3,000 kg total loaded mass must stop at VÉRIFICATION brake check areas
- ✓ Come to a full stop and check the brakes yourself at a brake check area

187.5 Driving on the Shoulder

Driving on the shoulder of a highway or controlled access road is permitted only if all conditions are met: the driver took the required training, signage authorizes it, and highway traffic speed is under 50 km/h.

- ✓ Driver must have taken the required training course
- ✓ Signage must authorize travel on that highway or road
- ✓ Highway traffic speed must be under 50 km/h

CHAPTER 188

14 - Suspension

188.1 U-Bolts and Axle Positioning

Only suspension components on weight-bearing axles must be checked. Check for movement of axles/wheels from normal position: as you approach, check wheel parallelism and axle position. Inspect U-Bolts and positioning components (torque rods, suspension brackets) where accessible.

- ✓ Defect 14.C (major): A U-Bolt is missing, improperly mounted, cracked, or broken
- ✓ Defect 14.G (major): The wheels are not parallel, or an axle/wheel has moved from its normal position

188.2 Axle Positioning and U-Bolts

Only suspension components on weight-bearing axles must be checked. As you approach, check the parallelism of wheels and axle positions for any movement from normal position. Inspect the U-bolts and axle-positioning components (torque rods, suspension brackets) when accessible.

- ✓ Major defect (14.C): a U-bolt is missing, improperly mounted, cracked or broken
- ✓ Major defect (14.G): the wheels are not parallel, or an axle/wheel has moved from its normal position

188.3 Metal/Composite Spring Suspensions

For metal or composite spring suspensions, check presence, condition, and position of leaf springs, coil springs, and torsion bars. Observe for complete or partial sagging as you approach, then inspect accessible parts. Intersecting cracks means two cracks crossing at a perpendicular angle.

- ✓ Defect 14.A (major): A master leaf is missing/broken, or 25% or more of an assembly's leaf springs are broken/missing
- ✓ Defect 14.D (major): A composite leaf spring cracked along 75% of its length or with intersecting cracks
- ✓ Defect 14.E/14.F (major): A coil spring out of place contacting a moving part; a coil spring broken causing complete sag; or a torsion bar broken
- ✓ Defect 14.1 (minor): A leaf spring other than a master leaf, or a coil spring, is broken

188.4 Air (Pneumatic) Suspensions

For air suspensions, check vehicle balance, air spring condition, and system for leaks. Ensure air circulates in suspension lines and air springs are properly inflated (lines generally supplied at 483 kPa / 70 psi). Listen for leaks. You must start the vehicle to run the compressor and determine whether a leak is a major defect.

- ✓ Defect 14.B (major): An air leak that cannot be compensated by the compressor at idle; or an air spring missing or deflated
- ✓ Defect 14.2 (minor): Suspension shows an air leak; an air spring damaged exposing the cord; or an air spring showing repair indications
- ✓ Suspension lines are generally supplied when air pressure reaches 483 kPa (70 psi)

188.5 Rubber Pad Suspensions

For rubber pad suspensions (often on concrete mixers), check presence and condition of the rubber pads. This is done in addition to checks in 14.1.

- ✓ Defect 14.A (major): A rubber pad is missing or broken
- ✓ Position yourself to check the suspension's rubber pads

CHAPTER 189

Chapter 12 - The Inspection Report

189.1 Purpose and Mandatory Nature of the Report

The circle check report differs from the list of defects and must be completed for each check, documenting results and defects.

- ✓ The inspection report must be filled out during each circle check
- ✓ It records inspection results, defects, the time of inspection and its validity period
- ✓ The person performing the check must record detected defects; the driver must add any defect noted during the trip
- ✓ A completed and valid report and the list of defects must be kept on board; a single report per circle check

189.2 Required Contents of the Circle Check Report

While no specific format is mandated, the report must contain specific mandatory information items.

- ✓ Must include vehicle's licence plate/unit number, operator's name, date and time of check, and location
- ✓ Must include defects noted during the check or trip, or a statement that no defect was noted
- ✓ Must include the legibly printed name and signed declaration of the person who performed the check
- ✓ Must include the driver's signature if they reviewed and accepted another's inspection, and the odometer kilometrage if equipped

189.3 Submitting and Formatting the Report

The original report must be submitted to the operator within a set period, and electronic formats are permitted under conditions.

- ✓ The driver must submit the original copy of the report to the operator within 20 days of its writing
- ✓ This applies even if a copy was already submitted to report a defect
- ✓ Electronic reports are permitted if they meet the Act to establish a legal framework for information technology

189.4 Driving in Canada and the United States

Québec circle check rules are based on National Safety Code Standard 13, with reciprocity but possible defect classification differences elsewhere.

- ✓ Québec circle check rules are based on National Safety Code Standard 13
- ✓ Minor and major defect classifications may differ between jurisdictions
- ✓ Drivers operating outside Québec must consult the operator regarding local regulations and always comply with the jurisdiction where travelling

CHAPTER 190

Appendices – List 1: Tires, Doors, Glass and Mirrors

190.1 Tire Defects and Wear Limits

Minor tire defects include the wear indicator touching the roadway or groove depth at/below the indicator, embedded foreign material, exposed cord/steel belt, distortion, and a worn/damaged valve. Major defects include a steering-axle (GVWR 4,500 kg+) tire with two adjacent grooves at/below the indicator, exposed cord on a whole assembly, and a flat, contacting, or bulging tire.

- ✓ Minor: wear indicator touches roadway or groove depth ⩽ wear indicator
- ✓ Major: steering-axle tire (4,500 kg+ GVWR) with 2 adjacent grooves ⩽ wear indicator
- ✓ Major: single/dual tires with exposed cord or steel belt
- ✓ Major: tire contacting a fixed part, flat, losing air, or bulging

190.2 Doors, Glass, and Mirror Defects

A driver's door opening with difficulty is a minor defect, while a passenger compartment door failing to close securely is a major defect. Damaged windshields/side windows blocking the driver's view, missing/damaged/unadjustable required outside mirrors, and insecure/sharp-edged mirrors are minor defects.

- ✓ Minor: driver's door opens with difficulty or fails to open
- ✓ Major: passenger compartment door fails to close securely
- ✓ Minor: windshield/side window damaged blocking required view; required mirror missing/damaged/insecure

CHAPTER 191

Chapter 12 – Lists of Defects and Obligations

191.1 The Three Lists of Defects

There are three distinct lists of defects, each tailored to a vehicle type, used to determine if a defect is minor or major.

- ✓ List 1 applies to all heavy vehicles except those covered by lists 2 and 3
- ✓ List 2 applies to buses (excluding motor coaches), minibuses and trailers hauled by them
- ✓ List 3 applies to motor coaches
- ✓ Non-PMP motor coaches require the specific inspection report and List 3 on board; owner fills report every 12,000 km or 30 days, whichever comes first

191.2 Obligations Regarding the List of Defects

Both operators and drivers have obligations to keep the prescribed list of defects on board and unmodified.

- ✓ Operators must place the applicable prescribed-format list of defects in each heavy vehicle and cannot modify its text, order or numbering
- ✓ Elements may only be added to the 'Specific inspections required by the operator' section
- ✓ Drivers must ensure the applicable list remains on board and hand it to any peace officer who requests it

CHAPTER 192

School Buses

192.1 School Bus Driver Training and Certification

School bus and minibus drivers must hold a certificate of competency from one of the two road transport training centres plus an appropriate class driver's licence. Certification requires a 15-hour Basic training program covering roles, safety equipment, pickup/drop-off techniques, and emergency response, with renewal every 3 years after 6 hours of supplementary training. Drivers must be patient, vigilant, and familiar with the Highway Safety Code and school board policy.

- ✓ Requires a certificate of competency plus appropriate class driver's licence
- ✓ Complete a 15-hour Basic training program to obtain certification
- ✓ Renew certificate every 3 years after 6 hours of supplementary training
- ✓ Must know the Highway Safety Code and school board transportation policy

192.2 School Bus Mandatory Equipment

A school bus must be equipped with three reflective warning triangles, one dry-chemical fire extinguisher installed near the front door and secured in a box within the driver's reach, and one complete first-aid kit within reach of the driver (contents prescribed by regulation). Do not drive on after stopping until all passengers are seated and the door is closed, and never leave the bus with passengers on board unless absolutely necessary.

- ✓ Carry three reflective warning triangles
- ✓ Carry one secured dry-chemical fire extinguisher near the front door within reach
- ✓ Carry one complete first-aid kit within reach of the driver
- ✓ Do not drive on until all passengers are seated and the door is closed
- ✓ Never leave a school bus with passengers aboard unless absolutely necessary

192.3 ÉCOLIERS Sign Requirements

If using a school bus to carry school children or passengers under 18 years of age, the vehicle must have an ÉCOLIERS sign at the front and the back. If carrying passengers age 18 or older, these signs must be removed or covered.

- ✓ ÉCOLIERS signs required at front and back when carrying children/under-18 passengers
- ✓ Remove or cover ÉCOLIERS signs when carrying passengers 18 or older

192.4 Picking Up and Dropping Off School Children

Slow down and move right to the lane edge or parking area. Two phases: first switch on the alternately flashing yellow warning lights (buses built before Aug 29, 2005 use hazard lights instead), then switch on flashing red lights and activate the stop sign. You may not pick up or drop off children unless the flashing red lights are on. You must also switch on your lights and stop sign if parked behind another school bus with flashing lights on. Never use these lights/sign in any other circumstances.

- ✓ Phase 1: switch on alternately flashing yellow warning lights (or hazard lights on pre-2005 buses)
- ✓ Phase 2: switch on flashing red lights and activate the mandatory stop sign
- ✓ Never pick up/drop off children unless the flashing red lights are on
- ✓ Switch on your lights/sign if parked behind another school bus with flashing lights on
- ✓ Never use flashing lights or the stop sign in any other circumstances

192.5 School Bus While Driving and Leaving Rules

Do not drive on after stopping until all passengers are seated and the door is closed. Never leave a school bus while passengers are still on board unless absolutely necessary.

- ✓ Do not drive on until all passengers are seated and the door is closed
- ✓ Never leave the bus with passengers on board unless absolutely necessary

192.6 School Bus Driver Training Requirements

School bus and minibus drivers need a certificate of competency from one of two road transport training centres plus a proper class licence. Certification requires passing a 15-hour Basic training program covering roles, safety equipment, pick-up/drop-off techniques, and emergency response. Renewal every 3 years requires 6 hours of supplementary training.

- ✓ Must hold a certificate of competency plus the appropriate class licence
- ✓ Complete a 15-hour Basic training program for school bus drivers
- ✓ Renew the certificate every 3 years after 6 hours of supplementary training

192.7 Mandatory School Bus Equipment

A school bus must have three reflective warning triangles, one dry-chemical fire extinguisher secured in a box near the front door within the driver's reach, and one complete first-aid kit within reach (contents prescribed by regulation). When carrying children or passengers under 18, ÉCOLIERS signs must be at front and back; for passengers 18 or older, these signs must be removed or covered.

- ✓ Carry three reflective warning triangles
- ✓ Carry a secured dry-chemical fire extinguisher near the front door within reach
- ✓ Carry a complete first-aid kit within reach with regulation contents
- ✓ ÉCOLIERS signs required for passengers under 18; removed/covered for 18+

CHAPTER 193

How the Emergency Brake Works (Chapter 4)

193.1 Emergency Brake Function and Activation

The parking brake system also serves as the emergency brake. If the service brake system fails and air cannot reach the brake chambers, the emergency brake stops the vehicle. It can be activated manually by pulling up the parking brake knob, or automatically when service brake air pressure drops below 242 kPa (35 psi).

- ✓ Parking brake system doubles as emergency brake
- ✓ Activate manually by pulling up parking brake control knob
- ✓ Activates automatically below 242 kPa (35 psi)
- ✓ Takes over if service brakes fail

193.2 Emergency Brake Pressure Thresholds

When emergency brakes activate, wheels with brake chambers begin locking at 483 kPa (70 psi) or below. By below 242 kPa (35 psi) all air is evacuated and the emergency brake is fully engaged, stopping the vehicle. A serious mechanical problem can drop pressure in seconds and lock rear wheels abruptly.

- ✓ Wheels begin to lock at 483 kPa (70 psi) or below
- ✓ Below 242 kPa (35 psi): all air gone, brake fully engaged
- ✓ Pressure can drop in seconds with serious faults
- ✓ Rear wheels may lock abruptly, making control difficult

193.3 Advance Warning and Driver Response

Low air pressure indicators warn before an emergency, activating when service reservoir pressure drops below 380 kPa (55 psi); some manufacturers set 550 kPa (80 psi) for more warning. When warned, react immediately and choose the best spot to stop before the emergency brakes lock the wheels.

- ✓ Low air indicators activate below 380 kPa (55 psi)
- ✓ Some manufacturers set warning at 550 kPa (80 psi)
- ✓ React immediately when light/buzzer comes on
- ✓ Stop safely before emergency brakes lock the wheels completely

193.4 Emergency Brake Function and Automatic Activation

The parking brake system also acts as the emergency brake. If the service brakes fail, the emergency brake stops the vehicle. You can activate it by pulling up the parking brake control knob, and it activates automatically when service system air pressure drops below 242 kPa (35 psi).

- ✓ Parking brake system doubles as the emergency brake
- ✓ Activate manually by pulling up the parking brake control knob
- ✓ Activates automatically below 242 kPa (35 psi)

193.5 Pressure Thresholds During Air Loss

When emergency brakes activate, wheels with brake chambers begin locking at 483 kPa (70 psi) or below; by below 242 kPa (35 psi) all air is evacuated and the emergency brake fully engages, stopping the vehicle. Low air pressure warnings activate below 380 kPa (55 psi); some manufacturers set the threshold at 550 kPa (80 psi) for more warning.

- ✓ Wheels begin locking at 483 kPa (70 psi) or below
- ✓ Full emergency engagement below 242 kPa (35 psi)
- ✓ Low air warning activates below 380 kPa (55 psi), sometimes 550 kPa (80 psi)

193.6 Reacting to Low Air Pressure

React immediately when the low-pressure light or buzzer comes on: choose the best spot to stop before pressure drops enough to lock the wheels. Serious mechanical problems can drop pressure in seconds, and rear wheels may lock abruptly making the vehicle hard to control.

- ✓ React immediately to the low-pressure warning
- ✓ Stop safely before the emergency brakes lock the wheels
- ✓ Air loss can happen in seconds; rear wheels may lock abruptly

CHAPTER 194

Self-Evaluation Exercises - Chapter 1 & 2

194.1 Key Tested Facts on Responsibilities and Fatigue

The self-evaluation exercises reinforce critical exam facts: mandatory seat belt use, circle check reporting, inspection station obligations, spring thaw load restrictions, accident scene duties, and fatigue/alcohol/vision principles.

- ✓ Heavy vehicle drivers in Québec must wear the seat belt installed by the manufacturer
- ✓ The principal causes of accidents on Québec roads are speeding, alcohol, distraction and fatigue
- ✓ If tired while driving, pull over and stop in a safe location to rest
- ✓ When driving at night, your full stopping distance must be within the area lit by your headlights

194.2 Fatigue and Sleep Exam Answers

The fatigue self-test confirms key testable points on sleep debt, biological clock, alcohol interaction and long-trip preparation.

- ✓ Fatigue effects equal a 0.05 BAC after 17 hours without sleep
- ✓ Driving ability is affected after even a single night without a full night's sleep
- ✓ Periods of drowsiness are more frequent at night; lowest fatigue-accident risk is morning between 8:00 a.m. and noon
- ✓ Drivers under age 25 should sleep more hours than an older driver, and even one or two drinks significantly affect an already tired driver

CHAPTER 195

Chapter 12 - Component 1: Coupling Devices Inspection

195.1 Fifth Wheel Fasteners Inspection

Inspecting the fifth wheel mounting angle fasteners determines hitching solidity; defect severity depends on percentage missing/loose and hitched status.

- ✓ MAJOR (1.C): when hitched, more than 20% of parts fastening the fifth wheel to the frame are missing, broken or loose on an anchorage
- ✓ MAJOR (1.B): when hitched, there is movement between a fifth wheel fastener (mounting angle) and the vehicle chassis frame
- ✓ MINOR (1.1): when hitched, 20% or less of fastening parts are missing, broken or loose on an anchorage
- ✓ MINOR (1.1): when unhitched, one or more fastening parts are missing, broken or loose
- ✓ Non-load-bearing sections (in red) are not covered by the circle check

195.2 Sliding Fifth Wheel Locking Pins

The sliding fifth wheel's locking pins must be present and in locked position; a percentage threshold determines a major defect.

- ✓ MAJOR (1.D): when hitched, 25% or more of the locking pins of a sliding fifth wheel are missing or inoperative
- ✓ The percentage concerns the sum of all pins; typically two pins (one each side) but sometimes more — check all pins

195.3 Fifth Wheel Components Condition

Visible fifth wheel components must be inspected for cracks, deformation or deterioration that could cause breakage or separation.

- ✓ MAJOR (1.F): when hitched, a fifth wheel component is cracked, misshapen or deteriorated to the point of risk of breakage or separation
- ✓ Inspect visible parts including lower coupling plate, mounting angles, jaws and support

195.4 Upper Coupling Plate and Kingpin

The semi-trailer's upper coupling plate and kingpin must be inspected for deformation, cracks or improper securing.

- ✓ MAJOR (1.A): the coupling plate or kingpin is so misshapen it adversely affects hitching, or is cracked or improperly secured
- ✓ MAJOR (1.F): when hitched, the coupling plate or kingpin is deteriorated to the point of risk of breakage or separation
- ✓ Use opportunities when the vehicle is unhitched to inspect these parts, as deformation is hard to see when hitched

195.5 Fifth Wheel Jaws and Locking Mechanism

The fifth wheel jaws must be fully closed behind the kingpin and the locking mechanism engaged for a safe hitch.

- ✓ MAJOR (1.E): when hitched, the jaws are not completely closed behind the kingpin
- ✓ MAJOR (1.F): when hitched, the jaw locking mechanism is not engaged
- ✓ Check the locking mechanism indicator (bolt) or locking handle(s) position; ensure all handles are fully pushed in
- ✓ If sliding under the semi-trailer to check jaws, proceed safely with engine off, vehicle stationary, and notify someone

195.6 Coupling Devices Other Than a Fifth Wheel

For hook-and-ring type couplings (e.g. pintle hook, drawbar ring), fasteners on both the pulling and pulled vehicles must be inspected.

- ✓ MAJOR (1.C): when hitched, more than 20% of the fasteners attaching the coupling device are missing, broken or loose
- ✓ MINOR (1.1): when hitched, 20% or less of the fasteners are missing, broken or loose
- ✓ MINOR (1.1): when unhitched, one or more fasteners are missing, broken or loose
- ✓ Inspect fasteners attaching the device on both the tractor vehicle (hook) and the pulled vehicle (ring to drawbar)

195.7 Defect Icons and Pressure Conversions

The inspection tables use icons to distinguish defect severity and offences, and provide pressure conversion units for brake/suspension checks.

- ✓ Icons distinguish minor defects, major defects, and Highway Safety Code offences (not defects under the safety standards regulation)
- ✓ 1 psi (lb/in^2) = 6.895 kPa; pressure in kPa is calculated by multiplying psi by 6.895
- ✓ 100 kPa = 1 bar; 1 kcm^2 = 14.22 psi

CHAPTER 196

Appendices – List 1: Wheels, Hubs, Fasteners and Seat

196.1 Wheels, Hubs, and Fasteners Defects

Minor defects include lubricant under minimum or leaking (other than oozing) and an insecure spare wheel mount. Major defects include missing/invisible wheel bearing lubricant, a missing/cracked/broken/insecure wheel fastener, and a wheel that is damaged or repaired with welds.

- ✓ Minor: lubricant under minimum level or leakage other than oozing
- ✓ Major: wheel bearing lubricant missing or not visible through sight glass
- ✓ Major: wheel fastener missing, cracked, broken, or insecure
- ✓ Major: wheel damaged or shows signs of weld repair

196.2 Driver's Seat Defects

A driver's seat that is inadequate or does not stay in the set position is a minor defect. A driver's seat belt that is missing, modified, or inadequate is a major defect.

- ✓ Minor: driver's seat inadequate or not staying in set position
- ✓ Major: driver's seat belt missing, modified, or inadequate

CHAPTER 197

Chapter 12 – Components to Inspect

197.1 The 20 Circle Check Components

The circle check covers up to 20 numbered components; List 1 has 19 for heavy vehicles, while buses and motor coaches add a 20th passenger transport section.

- ✓ List 1 (heavy vehicles) has 19 components; buses and motor coaches add a 20th (passenger transport) section
- ✓ Components include coupling devices, frame/cargo body, steering, tires, brakes (electric, hydraulic, pneumatic), suspension, and more
- ✓ Vehicles not equipped with certain components (e.g. hydraulic brakes, coupling mechanism) do not need those parts verified
- ✓ Absence of a part that should be present is a defect that must be reported

CHAPTER 198

15 - Fuel System

198.1 Fuel Tank Fasteners and Filler Cap

Check that each fuel tank is securely mounted and has a filler cap. Vehicles often have more than one fuel tank — all must be checked. Inspect fasteners and confirm every tank has a filler cap.

- ✓ Defect 15.A (major): The fuel tank is not securely fixed with risk of separation
- ✓ Defect 15.B (major): The gasoline or diesel fuel tank does not have a filler cap
- ✓ All fuel tanks on the vehicle must be checked

198.2 Fuel Tank Leaks

Check the fuel tank(s) for leaks. Check the ground for liquid and inspect every tank for fuel leaks other than oozing. Trailers/semi-trailers may have accessory tanks (e.g. refrigeration) worth checking.

- ✓ Defect 15.C (major): A fuel tank shows a leak other than oozing, or a fuel leak other than oozing along the fuel delivery system
- ✓ Leaks are detected by the presence of fuel on the ground

198.3 Fuel Tank and Delivery Leaks

Check for liquid on the ground and inspect every fuel tank for leaks other than oozing. Trailers and semi-trailers may have accessory tanks (e.g. refrigeration) — checking them is suggested.

- ✓ Major defect (15.C): a fuel tank shows a leak other than oozing, or there is a fuel leak other than oozing along the fuel delivery system
- ✓ Leaks are detected by the presence of fuel on the ground

CHAPTER 199

Securing Baggage

199.1 Baggage Rules on a Motor Coach

It is prohibited to carry any item weighing over 50 kg and having a volume of more than 0.450 m^3 inside a motor coach. Passengers' baggage must be distributed and secured so it cannot move freely, since loose baggage may injure passengers or distract the driver. Packages and baggage must be stowed in the compartments designed for that purpose.

- ✓ Prohibited to carry items over 50 kg AND over 0.450 m^3 inside a motor coach
- ✓ Baggage must be distributed and secured so it cannot move freely
- ✓ Stow packages and baggage in designated compartments

199.2 Baggage Rules in Motor Coaches

It is prohibited to carry any item over 50 kg AND more than 0.450 m^3 inside a motor coach. Baggage must be distributed and secured so it cannot move freely, as loose baggage can injure passengers or distract the driver. Packages and baggage must be stowed in the compartments designed for them.

- ✓ Prohibited to carry items over 50 kg and more than 0.450 m^3 inside a motor coach
- ✓ Baggage must be distributed and secured so it cannot move freely
- ✓ Stow packages and baggage in the designated compartments

CHAPTER 200

Chapter 12 – The Inspection Report

200.1 Circle Check Report Requirements

The inspection report differs from the list of defects and must be completed at every circle check to inform the operator/owner of results.

- ✓ A report must be filled out during each circle check to record results and any defects
- ✓ If no defect is found, this must be indicated as well
- ✓ The completed valid report and the list of defects must be kept on board the vehicle
- ✓ If the report is not on board, the driver must obtain it or perform the inspection again

200.2 Mandatory Report Content

The report has no required format but must contain a defined set of information about the vehicle, inspection, and person performing it.

- ✓ Must include the licence plate or unit number, operator's name, and the date and time of the check
- ✓ Must include the municipality/location of the check and defects noted (or a note that none were found)
- ✓ Must include the printed name and signature/declaration of the person performing the check
- ✓ If driver did not perform the check, the driver's signature to attest review and acceptance is required, plus odometer kilometrage if equipped

200.3 Submission and Electronic Format of Report

The original report must be submitted to the operator within a set period and may be produced electronically under legal conditions.

- ✓ The driver must submit the original circle check report to the operator within 20 days of its writing
- ✓ This applies even if a copy was already submitted to report a defect
- ✓ Electronic reports are permitted if they meet the Act to establish a legal framework for information technology

200.4 Driving Outside Québec (Canada and US)

Québec circle check rules are based on a national standard, but drivers must comply with local rules where they travel.

- ✓ Québec circle check rules are based on National Safety Code Standard 13
- ✓ Drivers operating outside Québec must consult the operator on specific local regulations
- ✓ Drivers must always comply with regulations in the jurisdiction they are travelling in; ignorance is no excuse

CHAPTER 201

Load Restrictions

201.1 Authorized Vehicle Dimensions

General maximum authorized dimensions including load: height 4.15 m, width 2.6 m. Truck length 12.5 m (max overhang 4 m). Bus length 14 m (max overhang 4 m). Truck and trailer 23 m (max box length 20 m, overhang 4 m). Tractor and semi-trailer 23 m (max wheelbase 6.2 m, min interaxle 3 m, overhang 35% of wheelbase). Type B double train 25 m. Semi-trailer 16.2 m (max wheelbase 12.5 m). Trailer with dolly 14.65 m; without dolly 12.5 m.

- ✓ Maximum height 4.15 m and maximum width 2.6 m
- ✓ Truck max length 12.5 m; bus 14 m; truck and trailer 23 m
- ✓ Tractor and semi-trailer max 23 m; Type B double train max 25 m
- ✓ Semi-trailer max 16.2 m; max overhang generally 4 m (35% of wheelbase for tractor-semi)

201.2 Protecting the Road Network and Vehicle Components

Rules restrict vehicle loads to limit costly road damage. Exceeding load limits set by regulations or the manufacturer can seriously damage key components—brakes, tires, suspension, and coupling device—which are designed for a specific maximum load and will wear out prematurely if overloaded.

- ✓ Load limits exist to protect the road network from costly damage
- ✓ Exceeding limits damages brakes, tires, suspension and coupling device
- ✓ Components are designed for a specific maximum load and wear out prematurely if overloaded

201.3 Vehicle Load and Size Limits Regulation

The Vehicle Load and Size Limits Regulation ensures road user safety and protects infrastructure like roadways and bridges. It sets standards limiting load size, load per axle group, and total loaded mass of trucks on public roads, based on defined vehicle classes. Full details are in the Regulation and the Vehicle Load and Size Limits Guide.

- ✓ The Regulation ensures safety and protects roadways and bridges
- ✓ It limits load size, load per axle group, and total loaded mass
- ✓ Limits are based on vehicle classes defined in the Regulation

201.4 Load Per Axle

The maximum authorized load for an axle class is the lowest of three values: the total capacity of all tires in that axle class (on the tire sidewall), the front-axle capacity (5,500 kg for a front single axle class B.1; 11,000 kg for front tandem class B.2 or front multiple class B.3, unless the manufacturer/authorized modifier indicates more), and the axle class load limit for the time of year (normal or spring thaw).

- ✓ Maximum axle load is the LOWEST of three values
- ✓ Front single axle (B.1) capacity is 5,500 kg
- ✓ Front tandem (B.2) or multiple axle (B.3) capacity is 11,000 kg
- ✓ Tire capacity is shown on the sidewall; load limits vary by season

201.5 Total Loaded Mass

The authorized total loaded mass for a truck or vehicle combination is the lower of two values: the sum of maximum loads authorized for each axle class (depending on season), or the total loaded mass limit for the class of vehicle or combination.

- ✓ Total loaded mass is the LOWER of two values
- ✓ Value 1: sum of maximum authorized loads per axle class (by season)
- ✓ Value 2: total loaded mass limit for the vehicle/combination class

CHAPTER 202

Appendices – List 1: Suspension

202.1 Suspension System Defects

Minor suspension defects include a broken non-main leaf spring or broken coil spring and an air leak or damaged air ball. Major defects include broken main spring leaves/25% of assembly, uncompensated air leaks, cracked composite leaves over 75%, springs contacting moving parts, and broken axles affecting alignment.

- ✓ Minor: leaf spring (non-main) or broken coil spring
- ✓ Major: main spring leaf, rubber pad, or 25%+ of leaf springs broken/missing
- ✓ Major: air leak not compensated by compressor or air ball missing/deflated
- ✓ Major: broken axle or positioning component affecting parallelism

CHAPTER 203

Supplemental Brake Systems (Chapter 4)

203.1 Purpose and Limits of Supplemental Brakes

Supplemental brakes help reduce or stabilize vehicle speed and can be used alone or with the service brakes, but they cannot bring the vehicle to a stop. They are optional add-ons especially useful on steep grades with heavy loads, allowing constant speed without constantly using regular brakes.

- ✓ Help slow or stabilize speed; will NOT stop the vehicle
- ✓ Optional, not standard equipment
- ✓ Especially useful for heavy loads on steep grades
- ✓ Reduce wear on regular brakes

203.2 Types of Supplemental Brakes

Categories include engine compression brakes (most popular, convert engine to air compressor), exhaust brake retarders/turbochargers (choke exhaust gases), electromagnetic/eddy-current retarders (use a magnetic field), and hydrodynamic/hydraulic retarders (use oil pressure). Noise from engine brakes must be controlled and the exhaust system kept compliant.

- ✓ Engine compression brake is the most popular type
- ✓ Exhaust brake retarder chokes exhaust gases
- ✓ Electromagnetic retarder uses a magnetic field on soft-iron discs
- ✓ Hydrodynamic retarder uses motor/transmission oil pressure
- ✓ Watch engine brake noise; keep exhaust system compliant

203.3 How Supplemental Brakes Operate

Engine brakes and retarders are activated by a switch or lever but only begin working when you take your foot off the accelerator. Retarders require being in the right gear; engine compression brakes work very efficiently at maximum RPM. Braking power is always applied to the drive wheels.

- ✓ Activated by switch/lever but only work when off the accelerator
- ✓ Must be in the right gear for retarders to work
- ✓ Engine compression brakes work best at maximum RPM
- ✓ Braking power always applied to the drive wheels

203.4 Purpose of Supplemental Brakes

Supplemental brakes help reduce or stabilize speed but do NOT bring the vehicle to a stop. They are optional (not standard) and can be used alone or with the service brakes. Engine brakes use engine compression; retarders are installed on other vehicle parts.

- ✓ Supplemental brakes slow or stabilize speed but do not stop the vehicle
- ✓ They are optional, not standard equipment
- ✓ Braking power is always applied to the drive wheels

203.5 Using Supplemental Brakes on Grades

Supplemental brakes are especially recommended for heavily loaded vehicles descending steep grades, maintaining constant speed without constant use of regular brakes. Watch engine brake noise, ensure the exhaust system is compliant, and inspect its condition during circle checks.

- ✓ Recommended for heavily loaded vehicles on steep downgrades
- ✓ Maintain constant speed without constant regular brake use
- ✓ Ensure exhaust system is compliant due to engine brake noise

203.6 How Supplemental Brakes Are Operated

Engine brakes and retarders are switched on by a switch or lever but only start working when you take your foot off the accelerator. Retarders require the right gear, especially engine compression brakes which work very efficiently at maximum RPM. Refer to the manufacturer's manual.

- ✓ Activated by switch/lever but only work when off the accelerator
- ✓ Must first shift into the right gear
- ✓ Engine compression brakes work best at maximum RPM

CHAPTER 204

16 - Exhaust System

204.1 Exhaust System Components

Check condition of exhaust components; the engine must be running to check for a major defect. In the cab, if you smell exhaust, check for a hole in the floorboard. Around the vehicle, check for odours, inspect for leaks from defective joints/cracks/holes not originally provided, listen for noise, and look for abnormal soot. Components (muffler, pipes, brackets, fasteners, heat shields) can break or loosen.

- ✓ Defect 16.A (major): Leakage of exhaust gases enters the passenger compartment when the floorboard is perforated
- ✓ Defect 16.1 (minor): Leakage of exhaust gases other than from holes originally provided by the manufacturer
- ✓ The engine must be running to determine a major defect

CHAPTER 205

Anti-Lock Brakes (Chapter 4)

205.1 ABS Benefits and Operation

An anti-lock brake system (ABS/antiskid/anti-blocking) offers greater stability, better steering control, and sometimes shorter braking distance. It operates only when a wheel risks locking, such as during abrupt braking (situations where jackknifing occurs). Sensors and a computer adjust air pressure to the chambers based on grip, speed and pavement.

- ✓ ABS improves stability and steering control
- ✓ Operates only when a wheel is about to lock
- ✓ Helps prevent jackknifing during abrupt braking
- ✓ Sensors/computer adjust brake pressure for optimal traction

205.2 How to Brake with ABS

With anti-lock brakes, in an emergency push the brake pedal all the way to the floor and hold it there. The ABS automatically controls braking by producing a pumping effect — the driver does NOT pump the pedal.

- ✓ In emergency, push pedal fully to the floor and hold
- ✓ Do NOT pump the pedal — ABS pumps automatically
- ✓ ABS produces the pumping effect itself

205.3 ABS Operation and Advantages

An anti-lock brake system (ABS, also antiskid/anti-blocking) engages only when a wheel risks locking, such as abrupt braking — situations where jackknifing and accidents occur. ABS offers greater stability, better steering control, and sometimes shorter braking distance by using sensors and a computer to adjust air pressure to each chamber for optimal traction.

- ✓ ABS engages only when a wheel risks locking
- ✓ Provides stability, steering control, and sometimes shorter braking distance
- ✓ Sensors and a computer continuously adjust brake pressure

CHAPTER 206

Appendices – List 1: Fuel, Exhaust, Electric and Hydraulic Brakes

206.1 Electric and Hydraulic Brake Defects

Electric brake minor defect is an insecure cable/connection; major defect is an important reduction in service brake capacity. Hydraulic brake minor defects include low master cylinder fluid and pedal reaching the floor; major defects include fluid below one quarter of maximum, pedal reaching floor in under 10 seconds, and inoperative brake boost.

- ✓ Major (electric/hydraulic): important reduction in service brake braking capacity
- ✓ Major: master cylinder fluid lower than one quarter of the maximum level
- ✓ Major: brake pedal reaches floor in less than 10 seconds or needs repeated depressing
- ✓ Minor: warning light on with engine running or parking brake warning light not working

206.2 Fuel and Exhaust System Defects

Fuel system major defects are a poorly fixed tank that could break loose, a missing cap, and a fuel leak other than oozing. Exhaust minor defect is a leak elsewhere than intended; major defect is a leak causing exhaust gas to enter the passenger compartment where the floor is perforated.

- ✓ Major: fuel tank poorly fixed and could break loose; cap missing; fuel leak other than oozing
- ✓ Minor: exhaust leak elsewhere than intended by manufacturer
- ✓ Major: exhaust leak entering passenger compartment where floor is perforated

CHAPTER 207

Chapter 7 Self-Evaluation Answers

207.1 Key Passenger Transport Facts

Reinforced exam facts: A school bus does NOT accept standing passengers (the seats-plus-standing rule applies to non-school chartered buses). Vehicles ⩾3,000 kg must stop at VÉRIFICATION signs. A bus must stop at least 5 m (not 3 m) from a level crossing. It is prohibited to pick up/drop off school children without flashing red lights on. You must switch on your flashing lights when stopped behind a school bus with its flashing lights on.

- ✓ School buses do not carry standing passengers; the +1-per-row rule is for chartered non-school buses
- ✓ Minimum stop distance from a level crossing is 5 m, not 3 m
- ✓ Flashing red lights must be on to pick up or drop off school children

CHAPTER 208

Chapter 12 – Component 1: Coupling Devices

208.1 Fifth Wheel Fastener Defects

The nuts and bolts fastening the fifth wheel to the vehicle frame must be present, secure, and free of movement; defect severity depends on percentage affected and hitch status.

- ✓ Major (1.B): when hitched, there is movement between a fifth wheel fastener/mounting angle and the vehicle chassis frame
- ✓ Major (1.C): when hitched, more than 20% of fastening parts are missing, broken or loose on an anchorage
- ✓ Minor (1.1): when hitched, 20% or less of fastening parts are missing, broken or loose on an anchorage
- ✓ Minor (1.1): when unhitched, one or more fastening parts are missing, broken or loose

208.2 Sliding Fifth Wheel Locking Pins

The locking pins of a sliding fifth wheel must all be present and in locked position, since the fifth wheel is usually locked by two or more pins.

- ✓ Major (1.D): when hitched, 25% or more of the sliding fifth wheel locking pins are missing or inoperative
- ✓ The percentage defect concerns the sum of all pins
- ✓ All pins must be checked and be in the locked position

208.3 Fifth Wheel Component Condition

The visible fifth wheel components must not be so damaged that they risk breaking or separating the vehicle combination.

- ✓ Major (1.F): when hitched, a fifth wheel component is cracked, misshapen or deteriorated to the point of risk of breakage or separation
- ✓ Components include the lower coupling plate, mounting angles, jaws and support

208.4 Upper Coupling Plate and Kingpin

The semi-trailer's upper coupling plate and kingpin must not be misshapen, cracked, or deteriorated in a way that affects hitching.

- ✓ Major (1.A): the coupling plate or kingpin is so misshapen it adversely affects hitching, or is cracked or improperly secured
- ✓ Major (1.F): when hitched, the coupling plate or kingpin is deteriorated to the point of risk of breakage or separation
- ✓ Inspect visible parts under the semi-trailer; deformation is hard to see when hitched

208.5 Fifth Wheel Jaws and Locking Mechanism

The fifth wheel jaws must be fully closed behind the kingpin and the locking mechanism must be engaged.

- ✓ Major (1.E): when hitched, the jaws are not completely closed behind the kingpin
- ✓ Major (1.F): when hitched, the jaw locking mechanism is not engaged
- ✓ Check the locking mechanism indicator (bolt) or the position of the locking handle(s); all handles must be fully pushed in

208.6 Non-Fifth-Wheel Coupling Devices

Coupling devices other than a fifth wheel (e.g. pintle hook and ring) must have secure fasteners on both the towing and towed vehicles.

- ✓ Major (1.C): when hitched, more than 20% of the fasteners attaching the coupling device are missing, broken or loose
- ✓ Minor (1.1): when hitched, 20% or less of the fasteners are missing, broken or loose
- ✓ Minor (1.1): when unhitched, one or more fasteners are missing, broken or loose
- ✓ Inspect fasteners attaching the device on both the tractor vehicle and the vehicle being pulled

CHAPTER 209

17 - Electric Brake System

209.1 Electric Brake Cables and Connections

Certain trailers use an electric brake system. Inspect visible electric cables and connections at connection and attachment points outside the vehicle. The attachment point fastens cables to the vehicle structure to prevent slack.

- ✓ Defect 17.1 (minor): An electric cable or connector is improperly fixed at a connection or attachment point
- ✓ Inspect visible cables/connections at both connection and attachment points

209.2 Trailer Service Brake Effectiveness

Check the effectiveness of the electric brake system: start the vehicle, drive slightly forward, press the brake pedal, and check whether the vehicle stops quickly.

- ✓ Defect 17.A (major): There is a significant reduction in the braking capacity
- ✓ Test by driving slightly forward and applying the brake pedal

CHAPTER 210

Special Travel Permits

210.1 Permits for Outsized or Overloaded Vehicles

Vehicles exceeding the Vehicle Load and Size Limits Regulation are outsized or overloaded and require a special travel permit. Class 1 to 7 permits (under the Regulation respecting special permits) cover vehicles outsized/overloaded by characteristics or indivisible loads. The 633 permit covers exceptional cases such as experimental vehicles and specific combinations (lift axles, rear fork lift, wheelbase over 6.2 m, Type B double train over 25 m, carrying automobiles, tractor with three rear axles). Special road train operating permits are issued under their own regulation.

- ✓ Outsized or overloaded vehicles require a special travel permit
- ✓ Class 1–7 permits cover indivisible loads or vehicle characteristics
- ✓ The 633 permit covers experimental vehicles and specific outsized combinations
- ✓ Special road train operating permits fall under a dedicated regulation

210.2 Types of Special Travel Permits

Vehicles exceeding the Vehicle Load and Size Limits Regulation are outsized/overloaded and need a special travel permit. Class 1 to 7 permits (Regulation respecting special permits) cover vehicles outsized/overloaded by characteristics or indivisible load. The 633 permit is for exceptional/experimental vehicles and situations like lift axles, rear-carried forklifts, tractor wheelbase over 6.2 m, type B double trains over 25 m, carrying automobiles, or three rear tractor axles. Special road train operating permits fall under a separate regulation.

- ✓ Outsized/overloaded vehicles must obtain a special travel permit
- ✓ Class 1 to 7 permits cover characteristic or indivisible-load oversize/overload
- ✓ The 633 permit covers experimental/exceptional situations to harmonize with other jurisdictions

CHAPTER 211

Brake Inspection & Brake Adjustment (Chapter 4)

211.1 Brake Inspection Before and During Trips

Check brakes are in good working order before each trip (method in Chapter 12). Watch pressure gauges and warning lights while driving and be alert for anything abnormal. In hilly/mountainous areas, use designated brake check areas indicated by a VÉRIFICATION sign — pull over, park at the stop sign and check brakes.

- ✓ Check brakes before every trip
- ✓ Monitor pressure gauges and lights while driving
- ✓ At VÉRIFICATION signs, pull over and check brakes
- ✓ Especially check brakes in hilly/mountainous regions

211.2 Importance of Proper Brake Adjustment

Brakes must be adjusted so maximum pressure is exerted by linings on drums/discs at all times. Poorly adjusted brakes (service, parking, or emergency) never work efficiently. Too much clearance between drum linings means insufficient pressure even if gauges show adequate air pressure.

- ✓ Proper adjustment is required in addition to good condition
- ✓ Applies to service, parking and emergency brakes
- ✓ Excess clearance = insufficient braking even with good air pressure
- ✓ Drum expands at high temperature, increasing clearance

211.3 Push Rod, Clearance and Regular Checks

The push rod must bridge the gap so linings press against the drum with full available pressure. Drums can wear, stretch or twist, increasing clearance. Brake adjustment must be checked regularly even with automatic self-adjusting brake levers.

- ✓ Correct clearance between linings and drum is essential
- ✓ Push rod must bridge the gap for full pressure
- ✓ Regularly check adjustment even with automatic self-adjusting levers

211.4 Automatic Self-Adjusting Brake Levers

When fitted, these levers automatically compensate for play between linings and drums as linings wear. They still require regular checking.

- ✓ Automatically compensate for lining wear play
- ✓ Still must be checked regularly

211.5 Preventive Adjustment Procedure

A simple procedure optimizes the play between linings and drums: ensure brakes are cold, release the parking brake, bring the system to maximum air pressure (120 psi), then fully depress the brake pedal for five seconds and release completely. Repeat four or five times.

- ✓ Make sure brakes are cold
- ✓ Release the parking brake
- ✓ Bring system to maximum air pressure (120 psi)
- ✓ Fully depress pedal 5 seconds, release; repeat 4-5 times
- ✓ Can incorporate into circle check when compressor comes on

211.6 Manual Brake Levers

If the vehicle lacks automatic self-adjusting levers, brakes must be adjusted manually. This is a complex task and should only be done by mechanics or specially trained drivers.

- ✓ Manual adjustment required without self-adjusting levers
- ✓ Complex task — only mechanics or specially trained drivers should do it

CHAPTER 212

Appendices – List 1: Pneumatic Brake System

212.1 Pneumatic (Air) Brake Defects and Leak Rates

Minor pneumatic defects include buzzers/warning lights and regulators not working properly and audible/measured leaks within limits. Major defects include no working low-pressure warning, an inoperative compressor, excessive air leaks, and important reduction of braking capacity.

- ✓ Minor: audible leak or leak over 20 kPa (3 psi)/min single-unit, 28 kPa two-unit, 35 kPa three-unit
- ✓ Major: leak over 40 kPa (6 psi)/min single-unit, 48 kPa two-unit, 62 kPa three-unit
- ✓ Major: no low pressure visual or warning light/buzzer operating
- ✓ Major: air compressor not operating properly; important reduction in braking capacity

CHAPTER 213

Trucking – Load Restrictions

213.1 Purpose of Load Restrictions

Load rules protect the road network from costly damage and prevent damage to vehicle components. Exceeding load limits set by regulation or the manufacturer damages brakes, tires, suspension and coupling devices, causing premature wear. The Vehicle Load and Size Limits Regulation ensures road user safety and protects infrastructure such as roadways and bridges.

- ✓ Exceeding load limits damages brakes, tires, suspension, and coupling devices
- ✓ The Vehicle Load and Size Limits Regulation limits load size, load per axle group, and total loaded mass
- ✓ Load limits protect road user safety and infrastructure

213.2 Determining Load Per Axle

The maximum authorized load for an axle class is the lowest of: the total capacity of all tires in that axle class (marked on the sidewall), the front-axle capacity (5,500 kg for a front single axle class B.1; 11,000 kg for a front tandem B.2 or multiple B.3, higher if manufacturer/authorized modifier indicates), and the axle class load limit depending on season (normal or spring thaw).

- ✓ Max axle load is the LOWEST of tire capacity, front-axle capacity, and seasonal axle limit
- ✓ Front single axle (B.1) capacity is 5,500 kg
- ✓ Front tandem (B.2) or multiple (B.3) axle capacity is 11,000 kg
- ✓ Load limits vary by season (normal period vs spring thaw)

213.3 Determining Total Loaded Mass

The authorized total loaded mass is the lower of: the sum of maximum loads authorized for each axle class (depending on season), or the total loaded mass limit for that vehicle/combination class.

- ✓ Total loaded mass is the LOWER of the sum of axle-class limits or the vehicle-class limit
- ✓ Seasonal period (normal or spring thaw) affects the axle-class sum

213.4 Maximum Vehicle Dimensions

General maximum dimensions including load: Height 4.15 m; Width 2.6 m. Length: truck 12.5 m (max overhang 4 m); bus 14 m (max overhang 4 m); truck and trailer 23 m (max box length 20 m, max overhang 4 m); tractor and semi-trailer 23 m; type B double train 25 m (max box length 20 m); trailer with dolly 14.65 m; trailer without dolly 12.5 m; semi-trailer 16.2 m (max wheelbase 12.5 m).

- ✓ Maximum height is 4.15 m and maximum width is 2.6 m
- ✓ Truck max length 12.5 m; bus max length 14 m; tractor and semi-trailer 23 m
- ✓ Type B double train max length 25 m; max box length 20 m; max overhang 4 m

CHAPTER 214

Safeguarding Bridges and Overpasses

214.1 Restricted Weight Signs for Bridges and Overpasses

Restricted weight signs near a bridge or overpass prohibit buses or trucks (also tow trucks, tool vehicles, equipment transport vehicles) whose total loaded mass exceeds the posted maximum. When accompanied by a tab at a preceding intersection, the sign gives direction and distance so drivers can choose an alternate route. A UN VÉHICULE À LA FOIS tab means only one heavy vehicle may cross at a time, even if under the posted mass limit.

- ✓ Restricted weight signs bar vehicles exceeding the posted total loaded mass
- ✓ A tab at an intersection shows direction and distance to the structure
- ✓ A UN VÉHICULE À LA FOIS tab allows only one heavy vehicle to cross at a time
- ✓ Signs also apply to tow trucks, tool vehicles and equipment transport vehicles

214.2 EN SURCHARGE (Legal Load Limit) Sign and Permits

A weight-restricted-to-legal-load-limits (EN SURCHARGE) sign means a heavy vehicle cannot cross the bridge or overpass if its weight exceeds the legal limit under the Vehicle Load and Size Limits Regulation. To cross while exceeding a posted or legal limit, the driver must hold a special travel permit issued for that purpose.

- ✓ An EN SURCHARGE sign bars vehicles exceeding the legal load limit
- ✓ A special travel permit is required to legally exceed the posted or legal limit
- ✓ Contact the Ministère des Transports du Québec for weight limit information

214.3 Restricted Weight Signs

Restricted weight signs indicate the maximum total loaded mass a bridge or overpass can support—buses/trucks exceeding it may not use it (also applies to tow trucks, tool vehicles, equipment transport vehicles). A restricted weight sign with a distance tab at an intersection lets you choose an alternate route. A UN VÉHICULE À LA FOIS tab means only one vehicle may cross at a time, even if under the weight limit.

- ✓ Vehicles over the posted maximum mass may not use the bridge/overpass
- ✓ A tab sign at an intersection shows direction/distance so you can find an alternate route
- ✓ A UN VÉHICULE À LA FOIS tab means only one heavy vehicle at a time may cross

214.4 Legal Load Limit Signs and Permits

An EN SURCHARGE (weight restricted to legal load limits) sign means a heavy vehicle cannot cross if its weight exceeds the legal limit in the Vehicle Load and Size Limits Regulation. To cross exceeding a posted or legal limit, the driver must hold a special travel permit issued for that purpose.

- ✓ EN SURCHARGE sign forbids crossing if weight exceeds the legal load limit
- ✓ A special travel permit is required to exceed a posted or legal limit on a bridge/overpass

CHAPTER 215

Brake Inspection and Adjustment (Chapter 4)

215.1 Brake Inspection Requirements

Check that brakes are in good working order before each trip (method in Chapter 12). Watch pressure gauges and lights while driving and note anything abnormal. In hilly or mountainous regions there are brake check areas marked by a VÉRIFICATION sign; you must pull over, park at the stop sign, and check your brakes.

- ✓ Check brakes before each trip
- ✓ Monitor pressure gauges and lights while driving
- ✓ Stop and check brakes at VÉRIFICATION brake check signs

215.2 Importance of Brake Adjustment

Brakes must be properly adjusted, not just in good condition, so maximum lining pressure reaches the drums or discs. A poorly adjusted brake never works efficiently; too much clearance between drum linings and drum gives insufficient pressure even if gauges show adequate air. Drums expand when hot and can wear or twist, increasing clearance; the push rod must bridge the gap. Always check adjustment even with automatic self-adjusting levers.

- ✓ Proper adjustment is required for maximum braking, not just good condition
- ✓ Excess clearance gives insufficient pressure even with adequate air
- ✓ Heat expands drums and increases clearance
- ✓ Check adjustment even with automatic self-adjusting brake levers

215.3 Automatic Self-Adjusting Brake Levers

These automatically compensate for play between linings and drums as the linings wear, but still require regular checking.

- ✓ Automatic levers compensate for lining wear automatically
- ✓ Regular checking is still essential

215.4 Preventive Adjustment Procedure

To optimize lining-to-drum play: ensure brakes are cold, release the parking brake, bring the system to maximum air pressure (120 psi), then fully depress the brake pedal for five seconds and release completely. Repeat four or five times. You may include this in the circle check when checking the pressure regulator; if not done regularly, repeat step 4 more than five times.

- ✓ Brakes must be cold and parking brake released
- ✓ Bring system to maximum air pressure (120 psi)
- ✓ Fully depress pedal for five seconds, release, repeat 4-5 times

215.5 Manual Brake Levers

Vehicles without automatic self-adjusting levers require manual brake adjustment. This is a complex task that should only be done by mechanics or specially trained drivers.

- ✓ Manual brake levers require manual adjustment
- ✓ Only mechanics or specially trained drivers should adjust them

CHAPTER 216

Rules for Securing Cargo

216.1 Highway Safety Code Cargo Requirements

Under the Highway Safety Code, a vehicle's load must be properly secured or covered so it cannot shift or be dislodged, placed so as not to obstruct the driver's view, interfere with stability or handling, or block lights, and secured in compliance with the Cargo Securement Standards Regulation.

- ✓ Load must be secured or covered so it cannot shift or fall off
- ✓ Load must not obstruct the driver's view, affect stability/handling, or block lights
- ✓ Load must comply with the Cargo Securement Standards Regulation

216.2 Cargo Securement Standards Regulation

The Cargo Securement Standards Regulation integrates National Safety Code Standard 10, Cargo Securement, applied throughout North America. It sets minimum requirements for securement systems and their use based on vehicle type and cargo type, aiming to prevent cargo from shifting or tipping and to ensure vehicle stability.

- ✓ The Regulation integrates National Safety Code Standard 10 (Cargo Securement)
- ✓ It sets minimum requirements based on vehicle and cargo type
- ✓ The objective is to prevent shifting/tipping and ensure vehicle stability

216.3 Cargo Securement Requirements

Under the Highway Safety Code, a load must be properly secured or covered so it cannot shift or be dislodged; placed so it does not obstruct the driver's view, interfere with stability/handling, or block lights; and secured per the Cargo Securement Standards Regulation. That regulation integrates National Safety Code Standard 10, applies across North America, and sets minimum securement requirements based on vehicle and cargo type to prevent shifting/tipping and ensure stability.

- ✓ Load must be secured/covered so it cannot shift or be dislodged
- ✓ Load must not obstruct the driver's view, block lights, or affect stability/handling
- ✓ Cargo must comply with the Cargo Securement Standards Regulation (NSC Standard 10)

CHAPTER 217

Driving Know-How and Road Safety (Chapter 5)

217.1 Basic Vehicle Control Skills

All heavy vehicle drivers must master basic skills to control speed and direction — using the accelerator, steering wheel, brakes and transmission correctly when negotiating curves, turning at intersections or passing.

- ✓ Master control of speed and direction
- ✓ Correct use of accelerator, steering, brakes and transmission
- ✓ Apply skills for curves, intersections and passing

217.2 Observation and Safe Driving Behaviours

Beyond mechanical skills, drivers must observe and adapt to the driving environment. Checking blind spots, using rearview mirrors, signalling intentions and maintaining adequate space must become second nature for safe, cooperative, responsible professional driving.

- ✓ Check blind spots regularly
- ✓ Use the rearview mirror and signal intentions
- ✓ Maintain adequate space around the vehicle
- ✓ Adopt the right professional attitude from the beginning

CHAPTER 218

Appendices – List 2 Buses: Distinctive Defects

218.1 List 2 Application and Bus-Specific Defects

List 2 applies to buses (other than motor coaches), minibuses, and any trailer towed by a bus, minibus, or motor coach. Bus-specific defects add luggage compartment door issues, emergency exit and door requirements, school bus side window views, and passenger transport safety items.

- ✓ List 2 applies to buses, minibuses, and their towed trailers
- ✓ Major: emergency exit blocked; emergency door inadequate or warning not working
- ✓ Minor (11.4): school bus side/rear driver-area window damaged blocking required view
- ✓ Minor: outside luggage/auxiliary compartment door inadequate or insecure

218.2 Passenger Transport Defects (Buses)

Passenger transport defects (all minor) cover insecure stanchions/handrails/grab handles, missing shock-absorbing material, damaged floors/steps, inoperative aisle lighting, insecure luggage racks, inadequate seats, and school bus stop sign and flashing light failures.

- ✓ Minor: stanchion, horizontal bar, grab handle, or guard panel insecure
- ✓ Minor: stop sign not operating properly or a flashing light not turning on (20.7)
- ✓ Minor: a flashing light or alternately flashing yellow light not turning on (20.8)

CHAPTER 219

Self-Evaluation Key Facts (Chapters 3 & 4)

219.1 Key True/False Exam Facts

Testable facts from the self-evaluation exercises: the tachometer is more reliable than engine sound for shifting; progressive shifting is NOT revving to maximum RPM; the emergency brake is not the device that holds a parked vehicle (that is the parking brake); the hand brake must not be used as a road service brake; air brakes react slower than hydraulic brakes; parking brakes are applied by spring force, not compressed air; braking power depends on vehicle weight and speed.

- ✓ Tachometer is more reliable than engine sound for gear changes
- ✓ Progressive shifting does not mean revving to maximum RPM
- ✓ Never use the hand brake control as a road service brake
- ✓ Parking brakes are applied by spring force (air releases them)
- ✓ Braking power depends on weight and speed

CHAPTER 220

Appendices – List 3 Motor Coaches: Distinctive Defects

220.1 List 3 Application and Motor Coach Exemptions

List 3 applies to motor coaches; any towed trailer is inspected under List 2. Notably, the electric brake system (17) and hydraulic brake system (18) are not subject to inspection for motor coaches, and the suspension list is reduced. Passenger transport items exclude the school bus stop sign/flashing light points.

- ✓ List 3 applies to motor coaches; towed trailers use List 2
- ✓ Electric brake (17) and hydraulic brake (18) systems are not subject to inspection
- ✓ Motor coach suspension defects are limited to air leak and broken axle items
- ✓ Passenger transport items 20.1–20.6 apply (no stop sign/flashing light points)

CHAPTER 221

Appendices – Laws and Regulations

221.1 Governing Laws and Regulations

Heavy vehicle operation is governed by key laws including the Act respecting owners, operators and drivers of heavy vehicles, the Highway Safety Code, and the Transport Act, plus numerous supporting regulations on bus transport, cargo securement, licences, safety standards, driving hours/rest, and dangerous substances.

- ✓ Key laws: Act respecting owners/operators/drivers of heavy vehicles, Highway Safety Code, Transport Act
- ✓ Regulations govern cargo securement, licences, safety standards, and driving hours/rest
- ✓ Specific regulations cover dangerous substances and vehicle load/size limits

CHAPTER 222

Appendices – Conversion Tables

222.1 Pressure Conversion Reference

The pressure conversion table relates psi, kPa, and bar for brake and tire pressures. Key exam-relevant values include 1 psi ≈ 6.9 kPa, and threshold values such as 5 psi ≈ 34.5 kPa and 3 psi ≈ 20.7 kPa used in air brake leak limits.

- ✓ 1 psi is approximately 6.9 kPa (0.07 bar)
- ✓ 5 psi ≈ 34.5 kPa and 3 psi ≈ 20.7 kPa correspond to brake leak thresholds
- ✓ Use the table to convert between psi, kPa, and bar