Commercial Driver's Guide

trucks, buses, emergency responders, and taxis

Alberta

Commercial Driver's Guide
Spring 2025

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This document is available at:
https://www.alberta.ca/driver-guides-overview-and-pdfversions.aspx

Commercial Driver's Guide

trucks, buses, emergency responders, and taxis

Introduction:

Being a professional driver involves more than just driving a different type of vehicle.

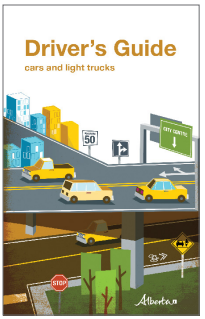
As a professional driver you must always make sure you are mentally and physically fit to drive, your vehicle is well maintained and is in good working condition, and you drive within the law including driving without distractions.

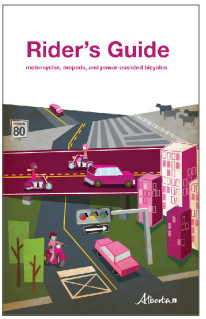
Always drive defensively. Be patient and tolerant of other drivers. Protect yourself, the vehicle, the passengers, and the cargo. The more you can anticipate and avoid dangerous situations, the less likely you will be in a collision. Being involved in a collision may result in loss of income, job, health, and possibly a life.

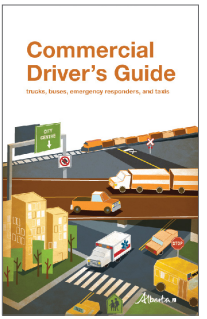
Remember that road safety is everyone's business.

This guide is available online.
www.alberta.ca/driver-guides.aspx

Guides available:







The following guides provide information about the safe operation of cars and light trucks, commercial vehicles, and motorcycles, and the licensing of drivers and riders. These guides provide information for all classes of driver licences in Alberta, and will help you obtain an Alberta driver's licence. Consider keeping the guides in your vehicle as a reference.

Driver's Guide

Cars and Light Trucks: This guide provides information for all drivers.

Rider's Guide

Motorcycles, Mopeds, and Power-Assisted Bicycles: This guide provides information on the safe operation of motorcycles, mopeds, and power-assisted bicycles. It is used with the Driver's Guide.

Commercial Driver's Guide

Trucks, Buses, Emergency Responders, and Taxis: This guide provides information about driving commercial vehicles. It is used with the Driver's Guide: Cars and Light Trucks. Both of these guides (and the Class 1 Learning Pathway curriculum if applicable) should be used when preparing for the knowledge test and when learning to operate trucks, emergency response vehicles, taxis, and buses, as well as when handling dangerous goods.

The Commercial driver's guide, along with the Driver's Guide: Cars and Light Trucks will give you the necessary information for learning to drive a truck, tractor-trailer, ambulance, taxi, or bus. These two guides provide information that will help you study to obtain a commercial Alberta driver's licence. It is recommended that you obtain training and education from a licensed driving school to enhance your knowledge and skill.

Individuals seeking to obtain a Class 1 driver's licence are required to complete the Class 1 Learning Pathway (C1LP) program.

Note for Class 1 drivers: While this guide includes information about operating Class 1 vehicles, information provided in the C1LP program should be considered to take precedence over the information provided in this guide. This guide is intended for all commercial drivers, while C1LP is specifically for Class 1 drivers.

Driver education courses are available for the operation of passenger vehicles, commercial vehicles, and motorcycles.

If you require information about schools that provide driver education, or information about the testing process to obtain a driver's licence:

- visit **www.alberta.ca/driving-vehicles.aspx**

This guide has no legal authority. Municipalities are given authority under the *Traffic Safety Act* to pass bylaws in areas such as speed zones, school zones, playground zones, and parking. You must know local municipal by-laws.

The laws that apply to driving a vehicle can be found in the *Traffic Safety Act* and its related regulations available at kings-printer.alberta.ca, and:

King's Printer Bookstore
Suite 700, Park Plaza
10611–98 Avenue
Edmonton, Alberta T5K 2P7

Tel: 780–427–4952
Fax: 780–452–0668

For toll free service anywhere in Alberta, call 310-0000, then the number.

Knowledge tests are conducted out of registry agent offices. Road tests will be conducted by Government of Alberta driver examiners. Road tests can be scheduled in-person at the registry agent office or online through the Government of Alberta online scheduling system.

To find testing services, and information about driver licensing and vehicle registration:

- visit **www.alberta.ca/lookup/find-aregistry-agent.aspx**
- visit **www.alberta.ca/drivers-road-test.aspx**
- visit the Association of Alberta Registries at **www.e-registry.ca**
- email **tec.licensingtraining@gov.ab.ca**

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Definitions

Air brakes (air to all foundation brakes)

A vehicle with an air brake system has brakes that are initiated by air pressure from an engine-driven compressor. This sends air pressure through a series of hoses, reservoirs, and control valves to all the vehicle's foundation brakes. An air brake Q-endorsement is required to drive a vehicle with an air brake system.

Air over hydraulic braking system (combination of air and hydraulic foundation brakes)

In an air over hydraulic braking system, the vehicle's axles have air actuated foundation brakes and some of the vehicle's axles have hydraulic foundation brakes. An air brake Q-endorsement or Class 1 licence is required to drive this type of vehicle.

Air actuated hydraulic braking system (air assisted, but all foundation brakes are hydraulic)

In an air actuated hydraulic braking system the air compressor is used to boost the hydraulic system to all the vehicle's foundation brakes. An air brake Q-endorsement is NOT required to drive this type of vehicle.

Ambulance

An ambulance is an emergency vehicle that is designed to transport injured persons, and is equipped with rescue or first aid equipment.

Axle

An axle is a shaft on which two or more wheels revolve.

Bus

A commercial vehicle

(i) that is designed for carrying 11 or more persons, including the person driving the vehicle, and

(ii) that is used or intended to be used for the transportation of persons, and includes any other commercial vehicle designated as a bus by regulation.

Commercial vehicle

A commercial vehicle is a vehicle that is operated on a highway by or on behalf of a person for the purpose of providing transportation, but does not include a private passenger vehicle.

Intercity bus

An intercity bus is a bus designated to carry more than 15 passengers, including the driver, and equipped with facilities to allow extended travel without stopping.

Q-endorsement

A Q-endorsement is placed on any class of driver's licence, when a driver successfully completes an approved Alberta air brake course through an authorized organization.

S-endorsement

A S-endorsement is placed on any class of driver's licence, when a driver successfully completes the School Bus Driver Improvement Program.

School bus

A commercial vehicle that

(i) meets the requirements of a Type A1, A2, B, C or D school bus described in CSA-D250-16, or a version of CSA-D250 applicable at the time of manufacture and that is used primarily to transport passengers and includes

(A) a school bus as defined in the Commercial Vehicle Safety Regulation (AR 121/2009)

(B) a multifunction school activity bus as described in CSA-D250-16, and

(C) a commercial vehicle that is registered as a kindergarten bus,

or

(ii) is an originally foreign bus,

but does not include a transit bus as defined in Vehicle Inspection Regulation.

Semi-trailer

A trailer that:

(i) has axles only at or near its rear end;

(ii) while being towed, is supported at its front end by the truck tractor or the immediately preceding trailer; and

(iii) when connected to the truck tractor or preceding trailer, is connected by means of a kingpin and a fifth wheel.

Trailer

A vehicle without motive power that is designed to be towed by another vehicle.

Truck

A motor vehicle designed and intended for the transport of goods or carrying of loads.

Truck tractor

A truck that may be coupled to a semi-trailer by means of a fifth wheel, but does not include a bed truck, picker truck, or winch truck.

Commercial driver's licences

Class 1

The minimum learning or licensing age is 18 years. You may not apply for a Class 1 driver's licence as a probationary driver.

The holder of a Class 1 driver's licence may operate the following:

- any motor vehicle or combination of vehicles other than a motorcycle
- Class 6 type vehicles for learning only.

Class 2

The minimum learning or licensing age is 18 years. You may not apply for a Class 2 driver's licence as a probationary driver.

The holder of a Class 2 driver's licence may operate the following:

- a bus (an S-endorsement is required to operate a school bus)
- any motor vehicle or combination of vehicles that the holder of a Class 3, 4, or 5 driver's licence may operate
- Class 1 and 6 type vehicles for learning only.

Class 3

The minimum learning or licensing age is 18 years. You may not apply for a Class 3 driver's licence as a probationary driver.

The holder of a Class 3 driver's licence may operate the following:

- any motor vehicle or combination of vehicles that the holder of a Class 5 driver's licence may operate
- a single motor vehicle with three or more axles
- a single motor vehicle with three or more axles towing a trailer with one or more axles, if the trailer is not equipped with air brakes
- all motor vehicles under Classes 1, 2, 4, and 6 for learning only.

No holder of a Class 3 driver's licence shall operate a motor vehicle:

- that has a seating capacity of more than 15, while that vehicle is transporting any person other than the driver
- to transport passengers for hire.

Class 4

The minimum learning or licensing age is 18 years. You may not apply for a Class 4 driver's licence as a probationary driver.

The holder of a Class 4 driver's licence may operate the following:

- any motor vehicle or combination of vehicles that the holder of a Class 5 driver's licence may operate
- a bus that has a seating capacity of not more than 24, excluding the operator (an S-endorsement is required to operate a school bus)
- an ambulance or taxi
- all motor vehicles under Classes 1, 2, 3, and 6 for learning only.

Driver's licence classes and the knowledge you require

As described above, each class of driver's licence provides a driver with a different set of privileges with respect to the vehicles they may operate.

This means a driver must have an increasing level of knowledge about driving commercial vehicles, based on their class of driver's licence. To have a higher class of driver's licence, a driver must have the required knowledge for that class, and for all lower classes of licence.

For example, for a Class 2 driver's licence, a person needs to have the required knowledge pertaining to Class 2 vehicles, as well as the required knowledge for Class 3 and Class 4 vehicles.

Class of driver's licence	Knowledge of driver's licence classes required
Class 1	Class 1, Class 2, Class 3, and Class 4
Class 2	Class 2, Class 3, and Class 4
Class 3	Class 3
Class 4	Class 4

This guide contains the knowledge required for all classes of commercial driver's licences.

You should review and know all appropriate parts of this guide, depending upon the class of driver's licence you wish to obtain. Unless otherwise stated, information in this guide pertains to all classes of commercial driver's licence. Where indicated, information pertains to specific classes.

- Chapters 1, 2, 3, 4, 5, 9 and 10 contain general information and base knowledge that pertain to all classes of driver's licence. These chapters should be understood by all drivers. Where noted, special information is included that pertains to a specific class.
- Chapter 6 contains information about particular operations unique to certain classes of vehicles. The information pertaining to specific classes is clearly noted. The applicable portions of this chapter should be understood by drivers, depending on the class of driver's licence.
- Chapter 7 contains information on transporting people, which is mainly applicable for Class 2 and Class 4.
- Chapter 8 contains information on transporting dangerous goods, which is mainly applicable for Class 1 and Class 3.

Upgrading your licence

The following information is for upgrading a driver's licence to the commercial driver's licence classes.

General information for Classes 1, 2, 3, and 4

- The minimum learning or licensing age for these classes is 18 years. To learn to drive a commercial class vehicle, you must have at least a Class 5 or a Class 5 GDL driver's licence. You may not apply for these driver's licences if you are in the GDL program.
- In order to enroll in a C1LP course, participants must be at least 18 years of age, and hold an Alberta Class 5 (full, non-GDL) driver's licence.
- You do not need an air brake endorsement when learning to operate a vehicle that is equipped with air brakes.
- A medical report is required to upgrade to a Class 1, 2, or 4 licence.
- A fee is charged for each knowledge test, road test, and driver's licence re-classification. For information regarding current fees, contact any Registry Agent office.
- A 10-day waiting period is required for all non-GDL Class 5, 5-6, and 6 new applicants from other Canadian jurisdictions who want to re-class to licence Classes 1 to 4. This waiting period is required for Alberta to confirm the applicant's licence information.
- Driving with the wrong licence class is against the law. It is also an offence for a vehicle's owner to allow the vehicle to be driven by someone who does not have the proper class of licence to drive that vehicle.

Class 1 Learning Pathway (C1LP)

Effective April 1, 2025, anyone who wants to obtain a Class 1 driver's licence must take a Class 1 Learning Pathway (C1LP) Program. Drivers are eligible to attempt the Alberta Class 1 knowledge test at any time from successful completion of the C1LP Entry Program until completion of the C1LP Core Learning Program.

Knowledge test

To upgrade a driver's licence, you will need to pass a knowledge test for the class of licence for which you are applying. You can take your knowledge test at most Alberta Registry Agent offices. For Class 2, 3 and 4, the knowledge test is comprised of questions based on the entirety of the Commercial Driver's Guide, as well as the Driver's Guide: Cars and Light Trucks. For the Class 1 knowledge test, the test is comprised of the Commercial Driver's Guide, as well as the Driver's Guide: Cars and Light Trucks, and the C1LP curriculum.

You will be asked about safe driving practices, driving laws, and road signs. Since Class 1 drivers may operate other types of vehicles, applicants for a Class 1 licence may be asked questions from the other chapters in this guide.

The test is 30 multiple choice questions and you must score a minimum of 25 correct responses out of 30 to pass. When six questions are answered incorrectly, the test will be stopped and a fail will be recorded.

Vision requirements

A vision assessment is required before upgrading your Alberta driver's licence. If you do not meet the minimum vision standards, you will be referred to an optometrist or an ophthalmologist to have a Vision Referral form completed. If you have corrective glasses or contact lenses, bring them to the vision assessment.

Medical fitness

A person's health can affect their ability to safely operate a commercial vehicle.

A medical report is required to upgrade your Alberta driver's licence to a Class 1, 2, or 4 driver's licence. You can obtain the necessary medical form from a physician, a nurse practitioner, or an Alberta Registry Agent. The form must be completed by a physician or a nurse practitioner.

A medical report is also required at regular intervals in order to maintain your Class 1, 2, or 4 licence:

- every five years until you reach 45 years of age
- every three years, between 45 and 65 years of age
- every year after 65 years of age.

An Alberta Registry Agent may request a medical report from any driver who holds any class of driver's licence, if they have concerns about the driver's medical condition.

A driver is legally required to report any disease or disability that may interfere with safe operation of a motor vehicle. If you develop a condition that may affect your ability to drive, you must report it to Transportation and Economic Corridors or to an Alberta Registry Agent.

Road test

Applicants must hold a full Class 5 (non-GDL) driver's licence to take a commercial road test.

If you are applying for a commercial licence in the Class 1, 2, or 3 categories, you will be required to conduct a pre-trip inspection in addition to the road test. You must communicate and demonstrate to the driver examiner:

- a pre-trip inspection of the vehicle
- the appropriate uncouple/couple procedures for Class 1 vehicles
- an inspection of the vehicle's air brake system for units equipped with air brakes.

As part of communicating and demonstrating, you should point to the things you are inspecting and tell the examiner what you are looking at. For example, you could say, "I am checking the left signal light to see that it is working, is securely mounted, and that the lens is clean and not cracked."

This guide includes pre-trip inspections for the various types of vehicles. Study and practise the pre-trip that is appropriate for the class of licence you are working towards. The procedures in this book are only guidelines to follow during a road test. A vehicle may require different items to be checked than those listed. You may not refer to any notes during the pre-trip.

Each pre-trip inspection and road test is allowed a certain amount of time. You should be able to complete the inspection and road test within that time.

If a vehicle does not pass the pre-trip inspection, or you do not successfully complete the pre-trip inspection, the road test will not proceed.

The examiner must see your road test permit or road test confirmation document. Permits can be purchased from any Registry Agent or through Alberta Road Test Scheduler. Road tests can be scheduled online through the Government of Alberta online scheduling system or at Registry Agent offices.

***Note**: A road test will not be done in a vehicle that is required to display dangerous goods placards.*

Class 1 Road Test

- Drivers are eligible to attempt the Alberta Class 1 road test after successfully completing the C1LP Core Learning Program.
- An applicant must provide a tractor-trailer with the following configuration:
  - tractor-trailer with gross vehicle weight of at least 11,794 kg
  - full-air brake system on both tractor and trailer
  - minimum tandem axle tractor and a tandem axle trailer
  - fifth wheel coupling device
  - single trailer with a minimum length of 45 feet and a minimum distance of 35 feet measured from the kingpin to the centre of the rear axle group
- A Class 1 licence may not be obtained without the driver first having qualified for an air brake endorsement.

***Note**: Starting February 1, 2023, a driver can complete the Class 1 road test in vehicle with an automatic transmission, rather than a manual transmission. A driver who uses this option will, if successful, have a condition code placed on their Class 1 driver's licence that restricts the driver to operating commercial vehicles with an automatic transmission. The condition code can be later removed if the driver successfully passes a second condensed Class 1 road test in a commercial truck with a manual transmission.*

Class 2 Road Test

- An applicant must provide a bus with a seating capacity exceeding 24 passengers, excluding the driver. If the vehicle is equipped with air brakes, the applicant must have either an air brake Q-endorsement or a course completion certificate from an approved air brake organization.

Class 3 Road Test

- An applicant must provide a single motor vehicle that has three or more axles. Three axle recreational vehicles may not be used. If the vehicle provided for the road test is equipped with air brakes, the applicant must have either an air brake Q-endorsement or a course completion certificate from an approved air brake organization.

***Note**: Drivers of single motor vehicles registered as farm vehicles do not require an air brake Q-endorsement*

Class 4 Road Test

- Starting February 1, 2023 a road test is not required to obtain a Class 4 driver's licence.
- However, a Class 4 driver is required to meet vision requirements and provide a driver medical report.

Learning requirements

Classes 1, 2, 3, and 4

Desired licence class	Class you must have for learning	Minimum licensing age	Minimum learning age	Complete C1LP	Accompanied by supervisor	Minimum age of supervisor	Supervisor licence class	Minimum age to take road test
1	2, 3, 4, 5, or 5-GDL*	18	18	Yes	Yes	18	1	18 non-GDL*
2	3, 4, 5, or 5-GDL*	18	18	No	Yes	18	1 or 2	18 non-GDL*
3	4, 5, or 5-GDL*	18	18	No	Yes	18	1, 2, or 3	18 non-GDL*
4	3, 5, or 5-GDL*	18	18	No	Yes	18	1, 2, or 4	Not applicable

** GDL – Graduated Driver Licence (Probationary)*

Air brake equipped farm vehicles

In Alberta, you are not required to hold an air brake endorsement if operating a single motor vehicle registered as a farm vehicle. However, you do need an air brake endorsement if driving a farm vehicle combination that requires the driver to hold a Class 1 driver's licence. When applying for a Class 1 driver's licence, you will need to show proof of your air brake qualifications, even if the vehicle you will be driving is registered as a farm vehicle.

Licences: renewal and changes

The Government of Alberta has stopped mailing out reminders about driver's licences and vehicle registration. Albertans can sign up for electronic reminders by visiting E-registry or MyAlberta and signing up for free reminders. It is your responsibility to renew your driver's licence on or before the expiry date.

To change a name or address on your driver's licence, visit any Registry Agent. By law, a person is required to notify Alberta Registries, through a Registry Agent, of any name or address change within 14 days. Proper identification is required before any change, replacement, or renewal can be made.

Training after employment

You will have more learning after you are employed as a commercial driver.

Employers are required to provide additional training to their drivers. This training may address issues such as:

- the operation of specialized equipment/features on a vehicle,
- occupation health and safety rules,
- company policies (such as dress codes, code of conduct and ethics, etc.),
- duties and scope of your position, and
- conditions of your employment.
- Employers often expect commercial drivers to have basic knowledge and understanding of the laws and other compliance requirements that govern the operation of commercial vehicles.

Remember, however, that your success as a commercial driver goes beyond your driving skills. Your interpersonal skills are also important.

2

National Safety Code

On April 1, 1989, each province and territory in Canada agreed to a set of performance and safety standards for commercial motor carriers and the National Safety Code (NSC) came into effect. Alberta, like the other jurisdictions, has passed legislation to put these standards into effect.

A person or company operating a commercial truck or bus is commonly referred to as a "motor carrier", or "carrier" for short. There is both provincial and federal NSC legislation that may require a carrier to obtain a Safety Fitness Certificate. Only one piece of legislation will apply to a carrier at any given time.

Federal law applies to carriers wishing to operate outside of Alberta and requires carriers to obtain a Safety Fitness Certificate if they operate:

- A truck, tractor, trailer, or any combination of these vehicles registered for or weighing in excess of 4,500 kilograms, or
- A commercial passenger vehicle with an original manufacturer's seating capacity of 11 or more persons including the driver.

Provincial law applies to carriers operating solely within Alberta and requires carriers to obtain a Safety Fitness Certificate if they operate:

- A truck, tractor, trailer, or any combination of these vehicles registered for a weight of 11,794 kilograms or greater, or
- A commercial passenger vehicle with an original manufacturer's seating capacity of 11 or more persons including the driver.

***Note**: Farmers are exempt from the requirement to obtain a Safety Fitness Certificate under provincial law but NOT the federal regulations.*

Each Canadian jurisdiction regulates carriers that register an NSC vehicle within their jurisdiction. An Alberta Safety Fitness Certificate can be valid in all other Canadian jurisdictions but only for those vehicles registered with Alberta plates and only if the carrier has declared that they are a "federal" company. If an Alberta carrier also has a commercial vehicle, regulated by the NSC requirements of another jurisdiction, then they will need a second Safety Fitness Certificate from that jurisdiction.

Each jurisdiction monitors its own NSC carriers and intervenes with those that pose an unacceptable risk to the public. Where a carrier does not respond positively to intervention actions and continues to represent an unacceptable risk to the public, the carrier may be prevented from operating by cancelling their Safety Fitness Certificate and their commercial vehicle registrations.

Safety plans

In Alberta, a carrier must establish, maintain, and follow a written safety program. A carrier failing to complete this regulatory requirement may be subject to disciplinary action including charges being laid in the courts, an administrative penalty being issued, or their Safety Fitness Certificate being cancelled. A carrier's Safety Plan must address matters relating to the safe use and operation of their commercial vehicles.

All drivers have a responsibility to know and follow the policies and procedures contained in their company's safety plan.

Each driver should:

- have received the training specified in the company's safety plan and know how to perform their duties properly and safely (e.g., training on drivers' hours of service, trip inspections, cargo securement, weights, and dimension requirements, etc.)
- ensure that the vehicle is being operated in compliance with the owner's policies and procedures, and within the law
- have all the applicable documentation completed and in his or her possession when required (e.g., Bills of Lading and Dangerous Goods documents)
- be medically fit to drive and not fatigued or under the influence of alcohol or any drug
- be qualified to operate the vehicle and have any required documents, such as a valid driver's licence, vehicle registration, and Dangerous Goods training certificate and insurance
- report any violations, convictions, and collisions to the carrier.

For more information, refer to the Commercial Vehicle Certificate and Insurance Regulation (AR 314/2002), which is available from the King's Printer.

Preventive maintenance plans

In Alberta, a carrier must establish, maintain, and follow a written maintenance and inspection program that covers all applicable vehicles registered to the carrier in Alberta, including leased vehicles. The policies and procedures set out in the maintenance program must provide for continuous and regular inspections that meet the requirements specified in the regulations.

Every driver is responsible to:

- understand the company's maintenance plan
- carry out those inspections and maintenance required by the owner
- carry out any inspections required by legislation, such as vehicle trip inspections
- complete any documents required by the owner and return those documents to the owner
- ensure the vehicle is inspected, or make it available for inspection, as specified in the company's preventive maintenance plan
- report any on-road inspections received from an enforcement officer and provide the documents to the carrier
- notify the carrier of any defects found during an inspection;
- not operate any vehicle with a defect that would jeopardize the safety of the driver or any other person.

For more information, refer to the Commercial Vehicle Safety Regulation (AR 121/2009), which is available from the King's Printer.

Hours of service

Hours of service legislation is safety legislation that ensures commercial drivers have enough opportunities to rest so they do not drive when tired.

There is both federal and provincial legislation that regulates drivers' hours of work. Alberta legislation applies to carriers and their drivers who operate vehicles solely within Alberta. The federal legislation applies to carriers and their drivers who operate one or more vehicles

outside of Alberta. Once it has been determined that a carrier falls within the federal legislation, all the drivers of the carrier's regulated vehicles must comply to federal requirements, even those that never leave Alberta. The main regulatory requirements are summarized below. To fully understand all requirements, one must read the applicable regulations.

Provincial (Alberta) legislation

The on-duty hours (consisting of "driving" and "on-duty not driving" time) allowed for a driver are regulated in work shifts that generally start after having a period of eight consecutive hours off-duty and end when the driver has another period of eight consecutive hours off-duty. Some situations are considered equivalent to this eight hour off-duty requirement.

During a work shift, a driver cannot drive:

- after having driven 13 hours; or
- after being on-duty for 15 hours.

A driver must account for every day by completing a daily log for each calendar day, or indicating in the remarks section of the daily log that the driver was off duty on the indicated dates.

When required to complete a daily log, a driver must do the following:

- enter all the required information
- maintain the daily log current to the last change of duty status, such as off-duty time and driving time
- maintain the daily log accurately
- keep copies of documents received during the trip, such as hotel receipts and fuel receipts
- deliver the daily log, and all supporting documents, to the employer within 20 days
- keep a copy of each daily log and supporting documents for at least six months

If ALL of the following four conditions are met, a daily log is not required to be completed (however, all other regulated requirements must still be met):

- the driver starts and ends the work shift at the same place
- the driver stays within a 160 kilometre radius of the home terminal
- there must be no more than 15 hours from the time the driver starts work until relieved of duty
- the employer must maintain a record for at least six months of the time each driver starts and ends a work shift.
- The driver's employer must:
- ensure the driver follows the regulations; and
- maintain the daily logs, in an orderly manner, for each driver for six months.

For more information, refer to the Drivers Hours of Service Regulation (AR 317/2002), which is available from the King's Printer.

Federal legislation

The federal drivers' hours of service regulations are more restrictive than the Alberta regulations. It is important to realize that the federal regulation has daily, work shift, and cumulative cycle limits that all must be met every day. The following is only a summary of the main regulatory requirements.

During a day (a consecutive 24-hour period determined by the carrier) a driver cannot drive:

- after having driven 13 hours; or
- after being on-duty for 14 hours.

In each day a driver must take 10 hours of off-duty time, eight of the hours off being consecutive. The other two hours must be taken in no less than 30-minute periods. Some concessions apply.

During a work shift (a work shift starts after the driver has eight consecutive hours off), a driver cannot drive:

- after having driven 13 hours;
- after being on-duty for 14 hours;
- after 16 hours of time has elapsed since the conclusion of their most recent eight hours of consecutive off-duty time.

Sleeper berth requirements differ between team and single drivers.

A carrier must ensure their drivers are following cycle 1 or 2. The driver must then indicate which cycle they are operating under on their daily log. Depending on the cycle, the driver shall not drive after accumulating:

Cycle 1 - 70 hours of on-duty time in seven consecutive days; or

Cycle 2 - 120 hours of on-duty time in 14 consecutive days.

Drivers using cycle 2 are required to take at least 24 consecutive hours off prior to reaching their 70th hour of on-duty time.

A driver operating on cycle 1 may reset their accumulative hours back to zero by taking 36 consecutive hours off-duty. A driver operating on cycle 2 may reset their accumulative hours to zero by taking 72 consecutive hours off-duty. A driver cannot move from one cycle to the other without taking a reset.

No driver may drive unless they have taken at least 24 consecutive hours off in the preceding 14 days.

A driver need not complete a daily log if:

- the driver operates or is instructed by the motor carrier to operate a commercial vehicle within a radius of 160 kilometres of the home terminal
- the driver returns to the home terminal each day to begin a minimum of eight consecutive hours of off-duty time
- the motor carrier maintains accurate and legible records showing, for each day, the driver's duty status and elected cycle, the hour at which each duty status begins and ends, and the total number of hours spent in each status, and keeps those records for a minimum period of six months after the day on which they were recorded and
- the driver is not driving under a permit issued under these regulations.

If a radius exemption from completing a log is used, all other requirements of the regulation must still be met.

For more information, refer to the Commercial Vehicle Drivers Hours of Service Regulation (SOR/94-716), which is available from Justice Canada.

Need more information?

To learn more about this legislation or to ask questions about the requirements, check the following.

Alberta legislation is available from the King's Printer at: **kings-printer.alberta.ca** or phone 780–427–4952.

For toll-free service from anywhere in Alberta, call 310-0000.

More information is available at:

www.alberta.ca/transportation-and-economic-corridors.aspx

Vehicle Inspection Program

For commercial vehicles

To maintain and enhance the safety of commercial vehicles travelling on Alberta highways, the province has a mandatory safety inspection program. This is called the Alberta Vehicle Inspection Program for Commercial Vehicles.

The Vehicle Inspection Program for Commercial Vehicles is not a replacement for the ongoing preventive maintenance carried out by vehicle owners, but rather sets the standards for owners' maintenance programs.

A commercial vehicle passing inspection under the Vehicle Inspection Program will receive a Commercial Vehicle Inspection Certificate, as well as a Commercial Vehicle Inspection decal to be placed on the vehicle.

As with the NSC, municipal transit buses and farm trucks are exempt from the Vehicle Inspection Program when operating solely within the borders of Alberta.

Which commercial vehicles need to be inspected under Vehicle Inspection Program?

Buses

All buses designed to carry 11 passengers or more, including the driver, must be inspected. This does not include municipal transit buses, but does include both school buses and commercial buses. Buses must be inspected every six months. Since 1978, Alberta has had a semi-annual inspection requirement for buses.

Trucks and trailers

All trucks, truck-tractors, trailers, and semi-trailers with a registered combined gross vehicle weight (GVW) of 11,794 kg or more must be inspected. Trucks and trailers must be inspected every 12 months. These are the same vehicles as governed under the NSC Standards.

How can I find out more about the Vehicle Inspection Program for commercial vehicles in Alberta?

For more information about inspection of commercial vehicles in Alberta, or to apply for a Vehicle Inspection Program Facility Licence or a Vehicle Inspection Program Technician Licence to inspect commercial vehicles, contact Vehicle Safety, Transportation and Economic Corridors by calling 780-427-8901 (for toll free service from anywhere in Alberta first call 310-0000). Please request to speak to a Vehicle Inspection Program Licensing Analyst.

Cargo securement

It is important to ensure that all cargo carried by a commercial vehicle is properly secured according to the requirements of NSC Standard 10, adopted in Alberta's Commercial Vehicle Safety Regulation (AR 121/2009).

Commercial trucks registered over 4,500 kg are required to ensure the cargo they carry is secure:

- A carrier shall not permit a driver to operate a commercial vehicle where the cargo transported in or on the vehicle is not contained, immobilized, or secured in accordance with the NSC Standard as it relates to the particular type of commercial vehicle.
- A driver shall not operate a commercial vehicle where the cargo transported in or on the vehicle is not contained, immobilized, or secured in accordance with the NSC Standard as it relates to the particular type of commercial vehicle.
- A driver or carrier must ensure that cargo transported by a commercial vehicle is contained, immobilized, or secured so that it cannot:
    - leak, spill, blow off, fall from, fall through, or otherwise be dislodged from the vehicle
    - shift upon or within the vehicle to such an extent that the vehicle's stability or ability to move is adversely affected.

If cargo is not properly secured, the driver, carrier, or shipper could face fines and penalties.

NSC Standard 10 can be viewed on the Canadian Council of Motor Transport Administrators website at: **www.ccmta.ca/en/national-safety-code**

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Trip Inspections

Purpose of daily vehicle inspections

The purpose of a daily vehicle inspection is to ensure the early identification of a vehicle problem and defects before the vehicle is operated on the highway. Inspections prevent the operation of a vehicle with conditions that are likely to cause or contribute to the severity of a collision.

The trip inspection process is part of a carrier's legal requirement to have and implement a written maintenance program. It also ensures there is clear communication within the company about the vehicle's day-to-day safety.

Inspection reports serve as communication between drivers, the carrier, and the carrier's maintenance department. Reports are used to verify inspections, record defects, report defects, and may be used to verify repairs. Reports are completed immediately following an inspection.

A brief overview of the daily inspection program includes:

- The driver conducts an inspection on a vehicle or combination of vehicles.
- The inspection is conducted with the use of a schedule which lists the vehicle components and systems that require inspection.
- The driver completes and signs a report of the inspection.
- The inspection and report are valid for 24 hours.
- The driver is to carry the schedule and report in the vehicle. A driver is not permitted to drive a vehicle unless an inspection of that vehicle has been conducted within the previous 24 hours.
- The driver records any defects found during the inspection, while en route, and at the end of the trip or day.
- The driver reports defects to the carrier.

Vehicles that require inspections

Provincially regulated carriers (those that operate solely within Alberta) must complete trip inspection reports on:

- trucks registered for a weight of 11,794 kilograms and greater; and
- commercial passenger vehicles with a designed seating capacity of 11 or more persons, including the driver.

Federally regulated carriers (those that operate one or more vehicles outside the province of Alberta) must complete trip inspection reports on:

- trucks registered for a weight of 4,500 kilograms and greater; and
- commercial passenger vehicles with a designed seating capacity of 11 or more persons, including the driver.

A "commercial vehicle" is defined as a vehicle operated on a highway by or on behalf of a person for the purpose of providing transportation, but does not include a private passenger vehicle.

Vehicle defects

Recording defects

The driver is required to record a defect on the report immediately after the initial inspection, upon discovery of a defect while travelling, or when discovered at the end of a trip or day.

Reporting defects

For the purposes of reporting defects to the carrier, the carrier may designate an employee to receive reports of defects.

Major and minor defects, which are listed in a schedule, must be reported (a) without delay if the defect is a major defect, or (b) in a timely manner, and not later than the next required daily trip inspection, in all other cases.

Depending on the driver's situation, reporting defects to the carrier may be done in person, by phone, via written report, or by electronic means.

Driving with defects

A driver may continue to drive with a minor defect that is listed on an inspection schedule if the driver has immediately entered the defect on the daily inspection report and reported the defect to the carrier.

Vehicle not to be operated with a major defect

No carrier shall permit a person, and no person shall, drive a commercial vehicle on a highway when a major defect that is listed on an inspection schedule is present on the vehicle.

Inspection required

The driver is required to complete and sign a report upon completion of the inspection. Drivers are not permitted to drive a truck, drive a bus, or tow a trailer unless the driver or another person has conducted an inspection of the vehicle(s) within the previous 24 hours.

In addition to the initial inspection, whether conducted by the driver or not, the driver is required to monitor the condition of the vehicle(s) for defects while en route.

In addition to drivers, other persons such as maintenance or yard staff are also permitted to conduct inspections and complete and sign reports.

Where a trip inspection report has been completed, the trip inspection is valid for a maximum of 24 hours. This means a trip inspection conducted by a person may be used by another person, provided it was completed within 24 hours.

A person other than the driver who conducts an inspection and signs the report is responsible under law for the inspection and the information contained in the inspection report. The driver may rely on such an inspection and produce the report to an officer, unless the driver has reason to believe the inspection and report do not meet the requirements, or the driver is aware or ought to be aware that the vehicle has a defect.

Any number of trailers may be inspected and added to a single report if the report contains additional lines for additional trailers.

All information required to be on a report must be accurately completed in full.

On the demand of a peace officer, a driver must produce the inspection schedule and the written trip inspection report. Alberta's trip inspection legislation is contained in sections 9 through 16 of the Commercial Vehicle Safety Regulation (AR 121/2009) and can be viewed on the King's Printer website at: kings-printer.alberta.ca

There are vehicle inspectors throughout the province who conduct commercial vehicle inspections. Vehicles that do not meet the requirements can be taken out-of-service until the repairs are made. This can also result in fines and points assessed on the Carrier Profile or the driver's Commercial Driver Abstract.

Trip inspection report

The trip inspection report must include the following information:

- The licence plate number, the commercial vehicle identification number, or the unit number of the vehicle.
- The odometer or hubometer reading of the vehicle at the time of the inspection.
- The name of the carrier operating the vehicle.
- The name of the municipality or location on the highway where the vehicle was inspected.
- The name of the person who inspected the vehicle, along with a statement signed by that person stating that the vehicle has been inspected in accordance with applicable requirements.
- Indication that either no defect was detected, or each defect in the operation of every item required to be inspected in accordance with the applicable NSC Schedule (see "Trip inspection schedule", below, for more details).
- If a modified schedule is used, deleted portions of the NSC Schedule and information on additional items inspected must be indicated in the report.
- The time and date that the report was made.
- The name and signature of the driver or other person making the report.

Trip inspection schedule

Application of inspection schedule

- A truck, a tractor, and towed trailer are inspected using Schedule 1. A converter dolly is inspected as part of the trailer it is carrying. The dolly is to be inspected again when carrying a different trailer.
- A bus is inspected using Schedule 2.
- Carriers are required to supply drivers with a copy of the inspection schedule.
- Drivers are required to carry and produce the inspection schedule to an officer.
- A schedule and an inspection report may be combined on the same document.

Where to get inspection schedules

Schedule 1 - 4 of NSC Standard 13, which is published by the Canadian Council of Motor Transport Administrators, is acceptable in Alberta, including when produced by the driver of an Alberta plated commercial vehicle. These schedules may be viewed at: **www.ccmta.ca**. Some companies, associations, and organizations also produce and sell schedules and report forms.

Trip inspections

Inspection procedures

***Note**: Only the driver is referenced as the inspection person throughout the remainder of this chapter*

Drivers may choose an inspection procedure (circle procedure) that best suits the vehicle and its location. However, whichever procedure is used, each regulated inspection item must be inspected and, where a defect is discovered, the defect must be recorded on the report and reported to the carrier.

The following detailed trip inspection is for reference only. Check with your employer to determine if the company has its own forms for recording vehicle condition.

For additional information concerning the names, functions and descriptions of items and indicators on a bus, refer to the section "Components and systems of a bus" (further below). As a Class 1 driver, you will learn the components of a tractor-trailer in detail during your C1LP training.

***Note**: A vehicle trip inspection is required as part of the road test when applying for a Class 1, 2, and 3 driver's licence.*

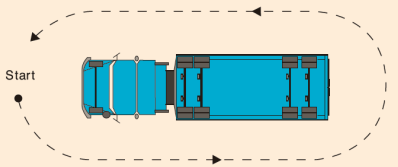
Before beginning the inspection

- Choose terrain that is as level as possible and park the vehicle safely away from traffic.
- Set parking/spring brake. Place the transmission in low gear for a manual transmission.
- Shut off the engine.
- Chock the wheels and ensure the chocks will keep the vehicle from moving, especially for vehicles equipped with air brakes when they are released later. The minimum size for square blocks should be 15 by 15 centimetres.

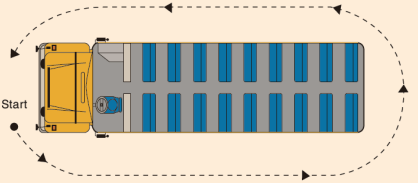
Circle check

The drawings below illustrate one way to make a full circle check. Do a walk-around check before starting any trip. The circle check may be done in any order, but make sure that you check everything and always make a complete circle around the vehicle. Much of the pre-trip information listed below is common to all commercial vehicles. Where there are extra items for specific vehicle types, it is indicated under its own heading.

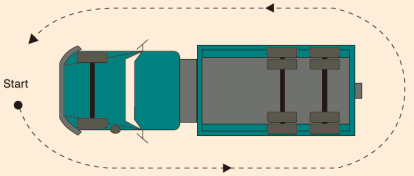
***Note**: The categories for a bus include commercial, school, and private buses. Unique school bus items are noted, if applicable.*



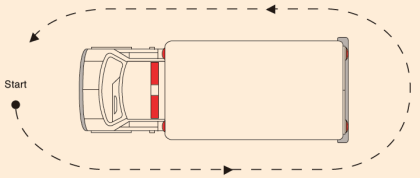
Truck-tractor and semi-trailer



School bus



Single unit with three axles



Ambulance

Daily walk-around procedure – items to check:

Starting at the front of the vehicle and going down the driver's side of the vehicle, from the front to the back, check the following:

Outside of the vehicle

Under the hood

All Vehicle Types

- ❑ radiator has no leaks, has adequate coolant level, and proper fitting cap
- ❑ fan has no bent, cracked, missing blades, or loose mountings
- ❑ all belts have correct tension and do not show signs of wear (a loose or slipping belt may cause an alternator/ generator warning light)
- ❑ oil level is adequate – the level should be above the line on the dipstick indicating "add", but not over the line indicating "full"
- ❑ other fluid levels are adequate
- ❑ air filter for condition
- ❑ battery has no cracks, excessive corrosion, or leaks, terminal connections are secure, battery is securely mounted (battery location varies on different vehicles)
- ❑ steering mechanism has no bent, broken, or missing parts, power steering pump and hose for leaks and adequate fluid level, steering mechanism has no wear or
- ❑ excessive play
- ❑ all hose connections are secure
- ❑ have no leaks, kinks, cuts, abrasions, or cracks
- ❑ wire connections all appear tight and secure, with no exposed wiring
- ❑ shock absorbers are not loose or leaking (if visible on the vehicle)
- ❑ suspension has no cracked, missing, or broken leaf springs, or U-bolts that are loose, broken, or missing (if visible on the vehicle)

Vehicles with Air Brakes

- ❑ air compressor is securely mounted, condition of lines, fittings, hoses, and couplers
- ❑ brake chambers for condition and security
- ❑ slack adjuster angle, push rod travel, mechanical condition and wear
- ❑ air lines have no leaks, kinks, cuts, abrasions, or cracks

***Note**: During the pre-trip inspection, return to the driver's compartment as required to turn the lights on and off to check that they are working properly.*

Front of the vehicle

All Vehicle Types

- ❑ no traces of leaking fluids on the ground under the vehicle
- ❑ high and low-beam headlights work, lenses are clean and not cracked
- ❑ hazard warning lights work, lenses are clean and not cracked
- ❑ right and left-turn signals work, lenses are clean and not cracked
- ❑ clearance and marker lights work, lenses are clean and not cracked, and reflectors are clean
- ❑ windshield is clean and free of major cracks

Driver's side of the vehicle

All Vehicle Types

- ❑ steering axle tire has adequate tread depth (not less than 3.2 mm), proper inflation, no bulges, sidewall separation, cuts, or uneven wear
- ❑ steering axle rim has no cracks, missing pieces, bends, or rust streaks, wheel fasteners are secure and not missing, broken, or loose
- ❑ oil level in steering axle wheel bearing, if equipped
- ❑ inspection decal is present, valid, and in the proper location (if required for the specific vehicle)
- ❑ mirrors are attached securely and not cracked
- ❑ driver's door operates properly (does not apply to a bus)
- ❑ windows are clean
- ❑ fuel cap is present and secure (fuel cap location may vary on each vehicle)

Rear of the vehicle

All Vehicle Types

- ❑ right and left-turn signals work, lenses are clean and not cracked
- ❑ hazard warning lights work, lenses are clean and not cracked
- ❑ brake lights work, lenses are clean and not cracked (whenever possible, have another person activate the brakes while you check for proper operation)
- ❑ clearance and marker lights work, lenses are clean and not cracked, reflectors and retro-reflective tape (if applicable) are clean
- ❑ licence plate is clean, attached securely, licence plate light is secure and works, and the lens is clean
- ❑ doors or gates work, are closed, and secure (if applicable)
- ❑ rear windows are clean (if applicable).
- ❑ mud flaps are secure and do not rub on the tires
- ❑ exhaust system is secure and has no visible leaks, muffler is securely attached (if applicable)

Passenger side of the vehicle

All Vehicle Types

Continue inspecting the passenger side of the unit using the same procedures as on the driver's side.

Inside the vehicle and engine start-up

All Vehicle Types

- ❑ seat and mirrors are adjusted properly
- ❑ seat belt is adjusted and fastened properly
- ❑ feel and operation of brake pedal and

clutch pedal (if equipped)

- ❑ steering has no excessive play or slack
- ❑ all gauges and warning lights work
- ❑ fuel level is adequate
- ❑ windows are clean, windshield is clean and free of major cracks
- ❑ windshield wipers work, washer has adequate fluid and sprays well
- ❑ defroster and heater work properly
- ❑ horn works and backing alarm works properly if equipped - some regulations require a backing alarm when vehicles are around workers on foot
- ❑ there are no unusual engine noises
- ❑ there is no unusual noise when the clutch is pushed in and released while the transmission is in neutral for a manual transmission (if applicable)
- ❑ radio equipment and P. A. system work and siren works in all modes (if applicable)

Extra equipment and documentation

All Vehicle Types

- ❑ fire extinguisher is fully charged and label shows that it has not expired
- ❑ an approved warning device is present
- ❑ first aid kit is fully equipped
- ❑ all necessary documentation is in the vehicle (including, for example, vehicle registration and valid insurance, Vehicle Inspection Program inspection certificate, pre-trip inspection form, safety fitness certificate, permits, logbook, and any other supporting documents)
- ❑ all personal protective equipment that is required before going on a work site is present
- ❑ tools are properly secured
- ❑ spare light bulbs, fuses, belts, and other required parts are present

Additional items for Class 1 and Class 3 vehicles

Front of the vehicle

- ❑ licence plate is valid, clean, and secure

Driver's side of the vehicle

- ❑ handrail is secure
- ❑ steps are secure and in good condition
- ❑ fuel tank has no leaks, tank is secure, the air vent is not plugged and that the proper fitting cap is secure
- ❑ fuel system lines are secure and have no leaks
- ❑ exhaust system is in good condition, has no leaks, muffler is securely attached, and the heat shield (if present) is secure
- ❑ storage compartment doors open and close properly and contents are secure
- ❑ first drive axle tires have adequate tread depth (not less than 1.6 mm), proper inflation, no bulges, sidewall separation, cuts, or uneven wear, dual tires are not touching and nothing is trapped between them
- ❑ first drive axle wheel rims have no cracks, missing pieces, bends, or rust streaks, wheel fasteners are secure and not missing or broken
- ❑ second drive axle tires have adequate tread depth (not less than 1.6 mm), proper inflation, no bulges, sidewall separation, cuts, or uneven wear, dual tires are not touching and nothing is trapped between them

- ❑ second drive axle wheel rims have no cracks, missing pieces, bends, or rust streaks, wheel fasteners are secure and not missing, broken, or loose
- ❑ fifth wheel coupler bolt is secure, slider is locked and secure, plate shows no damage, cracks or weld separations, plate is flush to the apron (no daylight is visible between them)
- ❑ fifth wheel locking jaws are closed, plate sits flat on the underside of trailer, kingpin is enclosed
- ❑ kingpin and pintle hitch eyehook (if equipped) is not worn, damaged, cracked, or broken
- ❑ hitches (if equipped), pintle hitch or ball hitch is not worn and locking mechanism is closed
- ❑ chains, cables (if equipped) have no stress cracks or weld breaks and are securely attached
- ❑ drive shaft is in good condition and there are no obstructions
- ❑ suspension has no cracked, missing, or broken springs, torsion bars or walking beams are secure and not damaged, no loose, missing, or broken U-bolts, shock absorbers are securely mounted and not leaking
- ❑ if the vehicle has air suspension, check for damaged, worn, or inoperative air bags
- ❑ axle assembly has no breaks, cracks, holes, broken seals or bends
- ❑ signal lights work, lenses are clean and not cracked
- ❑ brake lights work, lenses are clean and not cracked (whenever possible, have another person activate the brakes while you check for proper operation)
- ❑ backing and docking lights work, lenses are clean and not cracked (whenever possible, have another person activate the controls while you check for proper operation)
- ❑ brake chambers are secure, no signs of cracks, corrosion, or holes, and nothing obstructs the push rod travel
- ❑ slack adjusters - pull manually or use a pry bar to check for travel, mechanical condition, and wear
- ❑ air lines are secured, no leaks, kinks, cuts, abrasions, or cracks in housing
- ❑ mud flap is secure and does not rub tires
- ❑ body has no damage, broken or missing rivets, holes, or weld separations

Driver's front and side of a trailer (if equipped)

- ❑ inspection decal is present, valid, and in the proper location
- ❑ body has no damage, broken or missing rivets, holes, or weld separations
- ❑ frame and structural supports have no holes, bends, cracks, weld separations, or broken cross members
- ❑ landing gear is raised, handle is secure, there are no cracks or breaks in cross members or webbing, lowering mechanism is secure
- ❑ air lines are secured safely, there are no leaks, kinks, cuts, abrasions, or cracks in housing
- ❑ clearance and marker lights work, lenses are clean and not cracked, reflectors and retro-reflective tape are clean

- ❑ load security devices work, anchor points are secure, vehicle and load devices are not damaged
- ❑ first trailer axle tires have adequate tread depth (not less than 1.6 mm), proper inflation, no bulges, sidewall separation, cuts, or uneven wear, dual tires are not touching and nothing is trapped between them
- ❑ first trailer axle wheel rims have no cracks, missing pieces, bends, or rust streaks, wheel fasteners are secure and not missing or broken
- ❑ second trailer axle tires have adequate tread depth (not less than 1.6 mm), proper inflation, no bulges, sidewall separation, cuts, or uneven wear, dual tires are not touching and nothing is trapped between them
- ❑ second trailer axle wheel rims have no cracks, missing pieces, bends, or rust streaks, wheel fasteners are secure and not missing, broken or loose
- ❑ sliding tandem and locking pin - the pin is locked and secure, no bends, cracks, breaks, or weld separations in the cross members, torsion bars, or flanges
- ❑ brake chambers are secure, have no cracks or corrosion, and nothing will obstruct the push rod travel
- ❑ all slack adjusters - pull manually or use a pry bar to check for travel, mechanical condition, and wear
- ❑ suspension has no cracked, missing or broken springs, torsion bars or walking beams are secure and not damaged, no loose, missing, or broken U-bolts
- ❑ if the trailer has air suspension, check for damaged, worn, or inoperative air bags
- ❑ axle assembly has no breaks, cracks, holes, or cracked seals

Inside the vehicle

- hand throttle and accelerator pedal operate properly
- air pressure build-up time is adequate and the air pressure drop does not exceed an acceptable amount when the brakes are applied
- service brakes have been tested by driving forward slowly and stopping

Additional items for Class 2 and Class 4 vehicles

Front of the vehicle

- ❑ alternating amber and red flashing lights work, lenses are clean and not cracked (school bus only)
- ❑ pedestrian-student safety crossing arm is secure, not damaged, and works (school bus only)
- ❑ clearance and marker lights work, lenses are clean and not cracked, reflectors are clean
- ❑ crossover mirror is secure, clean, and not cracked (school bus only)

Driver's side of the vehicle

- ❑ stop arm is secure and not damaged (school bus only)
- ❑ body has no damage, broken or missing rivets, holes, or weld separations
- ❑ frame and structural supports have no holes, bends, cracks, weld separations, or broken cross members
- ❑ retro-reflective tape is clean (school bus only)
- ❑ clearance and marker lights work, lenses are clean and not cracked, reflectors are clean
- ❑ suspension has no cracked, missing, or broken springs, and no loose, missing or broken U-bolts

Rear of the vehicle

- ❑ alternating amber and red flashing lights work, lenses are clean and not cracked (school bus only)
- ❑ white flashing strobe light works (school bus only)
- ❑ clearance and marker lights work, lenses are clean and not cracked, reflectors and retro-reflective tape (if applicable) are clean (for school bus only)
- ❑ rear door opens properly, closes securely, emergency buzzer works and rear door seal is not damaged (school bus only)
- ❑ specialized equipment for transporting persons with disabilities is operating and is secured properly, if equipped
- ❑ spare tire, if equipped, is inflated and secure, jack and tools are properly secured

Passenger side of the vehicle

- ❑ fuel filler cap is present and secure
- ❑ passenger door operates smoothly and closes securely from the inside
- ❑ steps are clean and step light works, if equipped
- ❑ inspection decal is present, valid, and in correct location

Inside the vehicle

- ❑ handrail is secure
- ❑ fire extinguisher is fully charged and label indicates that it is valid, an approved warning device is present
- ❑ first aid kit is fully equipped
- ❑ all emergency exits open and close properly (the alarm system is working for school bus only)
- ❑ parking brake works
- ❑ stop arm and lights work (school bus only)
- ❑ passenger seats are securely fastened to the floor and are in good condition
- ❑ interior is clean and there is no damage
- ❑ restraints for the wheelchair work and are secured, if equipped
- ❑ if the ammeter continues to show a discharge after the engine is running, do not operate the vehicle, and report the issue immediately to your appropriate supervisor.

Further items for Class 4 vehicles (ambulances)

Front of the vehicle

- ❑ emergency lights work, lenses are clean and not cracked

Driver's side of the vehicle

- ❑ clearance and marker lights work, lenses are clean and not cracked, reflectors are clean
- ❑ drive axle tire has adequate tread depth (not less than 1.6 mm), proper inflation, no bulges, sidewall separation, cuts, or uneven wear, dual tires if equipped are not touching and nothing is trapped between them
- ❑ drive axle wheel rim has no cracks, wheel fasteners are secure and not missing

Rear of the vehicle

- ❑ medical equipment is stowed properly and inventory is completed
- ❑ fire extinguisher is fully charged and label indicates that it has not expired, an approved warning device is present

Trip air brake inspection

The following information is a guide only. As in the trip inspection of the vehicle, the driver plays an important role in maintaining the air brake unit. A driver must be alert and know how the air brake system works. Any brake problems must be reported so the necessary repairs can be done.

Step 1

- ❑ Chock the wheels with the vehicle on level ground.
- ❑ Perform a visual inspection of the air brake components.

Step 2 (Tractor protection system)

- ❑ Leave the engine off with the key in the 'run' position.
- ❑ Push the trailer air supply valve (red button); the park control valve (yellow button) should be pulled.
- ❑ Disconnect both air lines to the trailer.
- ❑ Trailer air supply valve should "pop" out at 40 – 60 PSI (276 – 414 kPa) or higher.
- ❑ Low air pressure warning should come on by 60 PSI (414 kPa).
- ❑ Apply and hold foot or hand valve; no air should leak from the open trailer service line.

Step 3 (Park control valve)

- ❑ Push park control valve (yellow button).
- ❑ Pump the foot valve.
- ❑ Park control valve should "pop" out at 20 – 45 PSI (138 – 311 kPa).
- ❑ Reconnect both air lines to the trailer.

Step 4 (Supply circuit)

- ❑ Start the engine and run at fast idle around 1200 RPM.
- ❑ Perform compressor build-up test; 50 to 90 PSI (345 to 621 kPa) within three minutes.
- ❑ Low air pressure warning light should go out by 60 PSI (414 kPa).
- ❑ Build air pressure to system maximum to confirm governor cut-out at120 – 135 PSI (828 – 931 kPa).
- ❑ Pump service brakes to reduce air pressure until governor cuts in. Confirm cut-in is 20 – 25 PSI (138 – 172 kPa) less than cut-out pressure.

Step 5 (Air system leaks)

- ❑ Push both park control valves and rebuild air pressure.
- ❑ Turn off the engine.
- ❑ Apply and firmly hold a full service brake application for 2 minutes.
- ❑ Maximum 4 PSI (28 kPa) loss for power units, plus an additional 2 PSI (14 kPa) per trailer, after the system stabilizes.
- ❑ Release service brake application and reapply spring park brakes.

Step 6 (Service brake response)

- ❑ Remove wheel chocks.
- ❑ Release spring park brakes.
- ❑ Perform a brake response test using the foot valve.
- ❑ Perform a brake response test using the trailer hand valve.

En route stops

Rest and check stops serve two purposes. First, they provide a break and a change of routine. You will feel less tired and more alert after a rest stop. Second, you can check your vehicle after it has been on the road for some time. You will be able to see if everything is still secure and working the way it should.

Schedule rest and check stops according to NSC requirements and your company's policy.

When choosing a stop, keep the following in mind:

- Make sure the vehicle is completely off the road.
- You should be able to enter and exit a rest or check stop so that you do not have to back the vehicle.
- Do not make a stop at the bottom of a hill or on an uphill slope.
- The stop area should have an adequate acceleration lane to allow you to merge on to the highway at the appropriate speed.

A vehicle inspection at a rest and check stop should include the following:

- All lights are clean and in working order.
- There are no air leaks.
- All the wheels are secure, and tires are properly inflated and are not hot.
- There are no broken or loose items on the vehicle.
- The load is secure.
- The dangerous goods placards are clean and secure (if applicable).
- The trailer locking mechanisms are secure and in good condition.
- The brakes are properly adjusted.

Monitoring your vehicle while en route

In addition to pre-trip and post-trip inspections, monitoring your vehicle's behaviour while driving will help prevent encountering dangerous and costly mechanical breakdowns. The following are vehicle components to monitor as you drive.

Brakes

- Any pulling to the left or right or skidding while braking?
- Brakes should not grab or lock or make excessive noise.
- Note any excessive pedal pressure that is required or unusual braking behaviour.
- Monitor the warning system to ensure that adequate pressure is maintained.

Transmission

- When the transmission is engaged in either the forward or reverse gear, the vehicle should start out smoothly in response to depressing the accelerator and the transmission should not produce any odd metallic noises.
- An automatic transmission should not "slip" and a manual transmission should allow for easy, smooth gear changes throughout the entire shifting range.
- Are there any difficulties shifting gears?

Clutch (manual transmission)

- The clutch should engage easily and smoothly without jerking, slipping excessively or "chattering".
- A properly adjusted clutch should have some "free play" (refer to manufacturer's recommendations) when pedal is fully released.
- Never "ride" the clutch pedal. Once the shift has been made, your foot should be removed from the clutch pedal and placed flat on the floor.
- When changing gears, carefully control the speed of the engine so that the shift may be completed without jerking or excessive slippage.
- Erratic or careless shifting of gears wears out the clutch and reduces service life.

Engine

- Be aware of any unusual engine noise, vibrations, or lack of normal response.
- Never "race" a cold engine. Increase speed slowly so that all parts may be properly lubricated. Refer to the manufacturer's recommendations for cold weather warm-up.

Steering

- Is it responsive?
- Does there appear to be excessive "play" or "jerking"?
- Is the power steering quiet?
- Does the vehicle steer easily?
- Does it go precisely where you steer it?
- Is steering steady in turning and over bumps?

Suspension

- Is there excessive bounce or does the vehicle bottom out when going over bumps or potholes?
- Does it weave or sway excessively when turning corners or curves? If this occurs, it may be due to broken springs or faulty shock absorbers.

Reporting to a vehicle inspection station

One of the most common misconceptions regarding vehicle inspection stations is that only large commercial vehicles have to report. The law is that all commercial vehicles or combinations weighing over 4,500 kg are required to report to inspection stations when the highway lights are flashing. A "commercial vehicle" is defined as a vehicle operated on a highway by or on behalf of a person for the purpose of providing transportation, but does not include a private passenger vehicle.

If you are operating a motor vehicle that is required to report, if the vehicle is loaded, drive slowly across the scale lane. If empty, drive slowly in the lane beside the scale lane. Whether loaded or empty watch the light board for instructions. If the "STOP" light is activated, stop the vehicle and wait for further instructions. If the "BACK UP" light is activated, slowly and safely back the vehicle up keeping in mind there may be other vehicles behind you. If the "PARK" light is activated park the vehicle in the lot and bring all of the vehicle and driver documents to the scale building.

Post-trip inspection

At the end of a shift, it is recommended you do a post-trip inspection. This will enable you to obtain service or repairs if required before the next trip. The report should include any problems discovered during the trip. Waiting to do the inspection can result in problems that are frustrating, time consuming, and costly.

Special information for buses (Class 2 and Class 4 vehicles)

Components and systems of a bus

It is important for a commercial bus driver to know the basic components and systems of the vehicle, where they are located, their functions, and how they operate. The layout and locations of vehicle components and systems may vary from one bus to another. For understanding of the function and layout of your vehicle's components and systems, consult your vehicle owner's manual.

Detailed information for trucks and tractor-trailers is covered in the Class 1 Learning Pathway (C1LP) curriculum for Class 1 vehicles.

The following table identifies components that are common to buses and their functions.

Primary Vehicle Controls

Name	Function
Accelerator pedal/ throttle actuator	This controls the flow of fuel entering the vehicle's combustion chamber, to adjust the speed to the corresponding gear of a vehicle.
Transmission (manual)	Involves the use of the clutch, the accelerator, and the gear lever to move through the shift pattern.
Clutch	This is a disc that transfers power from the engine to the transmission.
Clutch pedal	This is used to disconnect the engine from the transmission when starting the engine or shifting the gear of a vehicle.
Power steering system	This enhances easy movement of the steering wheel, through the use of hydraulic pressure.
Steering/steering mechanism	This allows the driver to make various types of manoeuvres in order to move a bus from one point to another.
Gear/shift lever	This is manually controlled by the driver to select vehicle speed by disconnecting the motor from the drive wheels.
Brake pedal/ actuator	This is used to slow down the speed or stop a vehicle.
Parking brake	This keeps the vehicle in a motionless state when it is parked, and can be used for emergency stop.

Secondary Vehicle Controls

Name	Function
Windshield wiper/ washer Defroster	These components play important roles in safety issues relating to vision.
Air vents Air conditioner and heater	These components play important roles in safety issues relating to comfort of the driver and passengers.

Name	Function
Horn Radio	The lights play important roles in safety issues relating to communication and vision.
Lights Exterior lights on the bus (stop/ taillight, back up light, turn signal lamps, licence plate light, hazard warning lamps, clearance lights, low beams, and high beams) Reflex reflector Retro-reflective marking (if it is on the bus)	The lights play important roles in safety issues relating to communication and vision. Front and rear side marker lamps and reflex reflectors indicate the vehicle's presence and length.
Instrument panel lamp Interior lamps on a bus including stepwell lights	These illuminate the interior of the bus and the dashboard or instrument panel when driving in the dark.

Lubricating System

Name	Function
Oil dipstick	This is used to indicate the level of oil in the engine.
Applicable hoses and clamps	Hoses are used to convey fluid or air from one part of the engine to another, and clamps are used to attach a hose to a fitting.
Oil filter	This collects dirt, grime, and bits of metal which must be removed before causing engine damage.

Cooling System

Name	Function
Radiator	The largest part of the vehicle's cooling system, this is a reservoir that assists in cooling the engine through heat exchange.
Radiator cap	Located on top of the filler neck, this seals the radiator and assists in maintaining the pressure on the coolant.
Exhaust system muffler Exhaust pipe	This system assists in removing or expelling burned gases and fumes to the rear of the vehicle and reduce the sound of the engine combustion.
Fan belt and blades	This transfers motion from the drive shaft to the radiator fan and the alternator.

Suspension System

Name	Function
Suspension & frame attachments	The suspension reinforces and distribute the weight of bus, and enabling movement of the axles during surface or ground changes.
Axle	This is a shaft on which two or more wheels revolve; a bus has a front axle and one or more rear axles.
Air suspension	This is a type of vehicle suspension which requires an electric or engine-driven air pump or compressor for operation.
Shock absorber	This assists in reducing the motion of the vehicle body when the wheel moves over on uneven surface.

Hydraulic Brake System

Name	Function
Hydraulic brake system	This system uses hydraulic (pressure) technology to apply force to the brakes immediately.

Buses With Air Brakes

Name	Function
Air compressor	This takes in air from the atmosphere, pressurizes the air, and pumps the air into storage tanks.
Air tank	This stores the air pressure and its size depends on the air volume required for the brake chamber.

Auxiliary Equipment

Name	Function
Fire extinguisher	This is used to put fire out in case of any fire outbreak. All extinguishers require an annual re-certification which includes a 14-point inspection. All extinguishers expire 6 years from manufacturer date, which is stamped on the bottom of the extinguisher.
Overhead hatches	This is located on the bus roof and functions as a roof ventilator and emergency exit.
First aid kit on a bus	Under the law, this must be present on a bus and must be located in a way that is easily accessible by the driver.
Advance warning triangle	These are emergency warning devices which are placed on the roadway to warn other road users in advance of any emergency.

Electrical System

Name	Function
Battery and battery cable	This converts chemical energy into electrical energy to supply power to the vehicle's electrical system.
Wires	These are used to connect and carry energy to the electrical components of a vehicle.

Vehicle Body and Frame

Name	Function
Hood or engine enclosure	This is the part of the bus body within which the engine is housed.
Vehicle body	This is the part of the bus that accommodates the driver and the passengers.
Seat	This is located in the interior of the bus for passengers and driver's comfort.
Seat belt/occupant restraint	When properly used, the restraint system may help in minimizing the impact of a collision on the vehicle occupants.
Fender/Mud Flap	This prevents debris from being thrown into the air.
Mirrors	These are used to observe traffic conditions behind and beside the vehicle, to assist in driving and manoeuvring the vehicle.
Windows	These allow for visibility and airflow, and may also be used as emergency exits.
Fuel tank door and cap	The tank is a safe container for flammable fluids, and the cap is a cover that screws onto the fuel inlet tube.
Doors	These allow vehicle occupants to enter and exit the bus.

Tires and Wheels

Name	Function
Tire	This is a ring-shaped, air-cushioned component around the wheel's rim that provides traction between the vehicle and road surface.
Wheel hub	This is the central portion of a wheel through which the axle passes.
Wheel/rim	This is single and multi-piece rim assembly used for mounting large tires of heavy equipment.
Wheel fasteners (nuts, bolts, and studs)	Wheel fasteners secure the wheels on a vehicle.

Gauges

Name	Function
Ammeter	Measures the level of electrical draw on a battery by how much the battery is being charged or discharged.
Water temperature gauge	This shows the temperature of the coolant in the engine.
Fuel gauge	This indicates the level of fuel in the fuel tank.
Air brake pressure gauge	This measures the amount air pressure in the air tank in pound per square inch (psi).
Diesel exhaust fluid (DEF) gauge	This indicates the level of diesel exhaust fluid (DEF) in the DEF tank, which is injected in the vehicle's exhaust system to lower nitrogen oxide emissions.
Speedometer	This displays the road speed in miles per hour or kilometre per hour.
Odometer	This indicates how many kilometres or miles the vehicle has been driven since manufacturing.
Thermostat	This is a temperature sensitive device that regulates the flow of the coolant.

Ignition Switch

Name	Function
Ignition switch	This is a switch in the control system that activates the main electrical systems for the vehicle.
Door control and latch	This controls the opening, closing, and locking of the doors.
Signal controls switches	This turns the signal lights on or off.
Light controls and adjustments	This is used to turn on or off the exterior lights and to adjust the light beam level.
Stability control system	This is a crash avoidance system found on new vehicles, which assists to detect and minimize skids and improve a vehicle's stability.
Anti-lock braking system	This is an electronic system that monitors and controls wheel slip during vehicle braking by minimizing lockup.

The following table identifies basic warning lights and indicator symbols that are common to buses, along with descriptions of their meanings.

Name	Colour	Description
Oil pressure warning lights	Red	This light may turn on as the bus is being started, but should turn off right after the engine starts, if it does not, then the vehicle should be examined. Low pressure means there either is not enough oil in the system or the oil pump is not circulating enough oil to keep the critical bearing and friction surfaces lubricated.
Low oil level warning light	Red	Displays when oil level is too low for normal, safe operation.
Low coolant level	Blue	Displays when the coolant level is low.
Service brake warning light	Red	With a dual brake system, if this light comes on during hard braking application, this could indicate that at least one of the brake hydraulic systems is not operating properly.

Name	Colour	Description
Alternator or generator warning light	Red	Displays when the alternator is not charging. A loose or slipping belt may cause this light to display.
Battery light	Red	The battery light indicates a battery charging problem.
Water temperature warning light	Red	This goes on when the engine coolant temperature is hot.
Low fuel warning light	Red	Displays when the fuel level is low.
Anti-lock brake system	Yellow	This is displayed during starting, and then goes off. If warning light comes on while you are driving, it means the ABS is inoperative.
Check engine	Yellow	Displays when the engine has a problem. While vehicle can still be safely driven it should be examined to correct the problem.
Park brake	Red	Displays when park brake light is applied.
Fasten seat belt	Red	Displays to remind drivers to fasten the seat belt.
High beams	Blue	Displays when high-beam lights are on.
Hazard signal	Green	Blinks when hazard lights are activated.
Left-turn signal	Green	Blinks when left-turn signal is on.
Right-turn signal	Green	Blinks when right-turn signal is on.
Stop engine	Red	Displays when major engine problems occur.
Cruise control	Yellow	Displays when cruise control is activated.
Diesel particulate filter	Yellow	Displays when the diesel particulate trap is plugged or when the regeneration operation is disabled.
High exhaust system temperature	Yellow	Displays when exhaust gas temperature becomes hot.

Summary of what to look for during a bus inspection

The following table provides a general guide for what to look for during a vehicle inspection. Detailed information on maintenance standards can be found in the Commercial Safety Regulation (AR 121/2009).

Exterior Inspection

Component	Check Points
Hood	• Hood latch is not missing and is secure
Bumper, Fender	• Is not missing • Is securely mounted • Is not broken, bent, or corroded, or have sharp edges
Mirrors	• Should be securely mounted and adjusted to the appropriate setting for the driver • Check for damage that affects the proper functioning of the mirror
Windows	• Cracks, discolouration, exposed sharp edges, or missing parts • Cracks or chips in any area swept by windshield wipers must not be greater than 25 millimetres in diameter • Driver's window can be opened on the inside • Emergency window(s) operate smoothly and seals are in good condition
Windshield Wipers and Washers	• Windshield washer system must function in accordance with the manufacturer's specifications • Each wiper arm and blade assembly must sweep the area specified by the manufacturer and provide effective clearing of the windshield
Frame (body, chassis, sliding subframe)	• Cracks, corrosion, structural damage, deformation, missing or loose fastener
Underbody	• Structural damage, deformations, perforations, or presence of openings not designed by the manufacturer

Component	Check Points
Drive Shaft	• Missing, loose, or damaged parts • Excessive wear • Universal Joints must not show evidence of free play
Brakes	• No cracks (other than heat crack) • Damage to drum or disc • Excessive wear – wear on discs or inside drum must not exceed manufacturer's wear limit
Hydraulic and Vacuum-Assisted Brake Components (if equipped)	• Leaks • Corrosion • Vacuum, hydraulic, or air boost systems are fully charged • Hydraulic levels are not lower than specified by the manufacturer • Hose and tubing are not crimped, bulged, cracked, broken, disconnected, rubbing against other parts of the vehicle • Air cleaner of vacuum system or air compressor is not clogged
Parking Brake	• Friction material must not be less than 1.6 millimetres when measured at any point of a bonded lining or pad other than the chambered area
Steering Components	• The power steering drive belt must not be missing, cut, frayed, or badly worn • Steering linkage system components are not loose or damaged • Bolts, nuts, clamps are not missing or badly worn
Suspension	• Excessive play for ball joints, control arm pivots, wheel and axle bearings • Front and rear springs, shackles, U-bolts, centre-bolts, radius rods, control arms, torque arms, equalizers, sway-bars, stabilizers and their supports and attachments must not be loose, bent, cracked, broken, disconnected, displaced, perforated by corrosion, or missing • Shock absorbers must not be loose, bent, disconnected, missing or damaged, or show evidence of active fluid leakage
Electrical Components	• Components are secured on their mountings • Battery must be securely mounted and must not be loose, missing, or have hold downs missing • Electric wiring and any cords must not be loose so as to contact moving parts, rubbed through the insulation, peeled, cut, or deteriorated

Component	Check Points
Lamps and Reflectors	• Components must not be damaged, discoloured, or be missing in whole or part • Lamps must not be covered or modified in a manner that reduces the effective area of the lens or reduces the brightness of the light
Tires	• Tire pressure is maintained in accordance with manufacturer's specifications • Excessive tread wear, tread separation, exposed cord, abnormal bumps, bulges, or knots • Cuts or snags that affect the safety of the tires
Wheels	• Wheel stud, bolt, clamp, nut, and lug must not be loose, missing, damaged, broken, or mismatched • Disc wheel assembly does not have any visible cracks, or be bent in a way that affects the safe operation of the vehicle • Hub must not be cracked, bent, distorted, worn, or missing. • Hub should also be checked for leaks
Mud Guard/Flap	• Is secure and not damaged
Exhaust	• Missing, perforated, patched, or insecure components • Leaks (leaks should be reported immediately due to the danger of carbon monoxide poisoning from gas entering the bus) • No part of the exhaust system must be closer than 50 millimetres to wiring, any part of a fuel or brake component, or any combustible material that is not protected by a shield
Fuel System	• Fuel tank is securely mounted/attached and fuel lines are present and secure • Filler Cap is not missing and is secure • Leaks

Interior Inspection

Component	Check Points
Heating and Defrosting Systems	• Visible portions of the hoses and piping for the interior heaters routed within the occupant compartment must not be abraded, cracked, or leaking • Windshield defroster system must deliver heated air to the windshield and, where fitted, to the side windows to the left and right of the driver • If the service door is equipped with frost-resistant glass panels, heated air does not have to be delivered to door glass panels
Lamps and Reflectors	• Each circuit must light and activate the required lamps on that circuit when the appropriate switch is in the “on” position
Brake Pedal	• Brake pedal pad or anti-skid surface is secure and does not have excessive wear (where equipped) • Moderate foot force is maintained when pedal is depressed for 10 seconds • Total pedal travel does not exceed 80% of the total available travel when heavy force is applied • The brake releases immediately when pressure is released from the pedal
Parking Brake	• When fully applied and not held by foot or hand force or by hydraulic or air pressure, the parking brake must hold the vehicle stationary against the engine momentarily while the vehicle is operated in reverse gear and low forward gear at a light throttle setting • Brakes are fully released while in the “off” position
Doors	• Securely fastened to the body • Function properly • Do not have missing, loose, or torn materials • Door controls operate smoothly and seals in good condition
Seats	• Are securely mounted • Cushion or padding are not missing, torn, or badly worn

Strobe lights on a bus

The strobe lamp on a bus must be activated during adverse atmospheric and visibility conditions, including fog, blizzard, and smoke, if the school bus has a strobe light. This light may be used anytime increased visibility is desired.

Post-trip inspection for a school bus

A school bus is subject to considerable wear and tear. It travels in poor weather conditions, often over difficult roads, and is usually full of lively children. For this reason, it is important that you inspect the bus both inside and outside at the end of every trip.

You will need to do the following:

- inspect the bus for lost articles and children who are sleeping or still on the bus
- clean the floors, particularly around the front steps
- check the condition of the emergency equipment
- report any minor damage and fluid leaks under the bus
- check the tires for damage and air leaks.

4

Having a Safe Trip

Know the law

It is important that you know and understand prevailing traffic laws. Some of the consequences of traffic convictions include:

- Fines – A driver may receive fines for a traffic violation. The amount of fine varies with the gravity of the traffic violation.
- Demerit points – Demerit points are recorded against your driving record when you are convicted of an offence. You are convicted when you:
  - Pay the fine assessed on your ticket voluntarily
  - Appear in a court and are found guilty
  - Fail to appear in a court and are convicted (guilty) in absence.
- Driver's licence suspension – Driving privileges can be immediately suspended for a specific period of time for various reasons, including accumulation of 15 or more demerit points within two years, impaired driving, refusal to comply with a lawful demand of a peace officer, etc. The period of suspension may vary with the frequency of the offence.
- Jail time – If you are found guilty under the Criminal Code of Canada to cause bodily harm or death while impaired, you may face a time in jail.
- Criminal record – Criminal convictions may affect an individual's employment status and/or future employment opportunities. An employer may require employees and job applicants to disclose criminal record history in order to maintain their jobs or prior to employing new employees.
- Insurance costs – Drivers with records, traffic convictions, and incidents may face increased insurance premiums.
- Travel restrictions – Individuals with criminal history may be refused entry into some countries.

It is important to note that traffic convictions and incidents are retained on an individual driver's record and will appear on your driving abstract. These may affect the status of your driver's licence as well as your ability to operate a commercial vehicle.

Make sure you have documentation

Prior to undertaking any trip, ensure all needed documentation is in the vehicle and confirm its location for easy access. Commercial drivers are required to carry:

- Registration Certificate
- Insurance Certificate
- Vehicle Inspection Certificate
- Bill of Lading (if required)
- Permit Books (if required)
- Pre-trip inspection form
- Safety fitness certificates
- Logbooks

Also ensure you have any required personal documents, such as your licence, identification from your employer, and any other relevant licences or documents.

***Note**: Documentation requirements vary in each province, so if you are making a trip across provincial or national boundaries, ensure you know the documentation requirements of all jurisdictions you may be traveling to or through.*

Distracted driving laws for commercial vehicles

The distracted driving law applies to all vehicles as defined in the *Traffic Safety Act*. It includes vehicles such as cars, motorcycles, motor homes, truck tractors, farm vehicles, and bicycles.

Do not use a cellular phone or other electronic devices while driving. Using a cellular phone to make or receive a call, or to receive or send a text message, is a distraction that can take your attention away from the demanding task of driving. This applies to hands-free cellular telephones as well. If you want to make or receive a call, or receive or send a text message, stop in a safe and legal place.

Do not do activities that allow you to be distracted while driving. While all forms of distracted driving can be hazardous, the *Traffic Safety Act* includes fines for certain distractions. These include:

- using a hand-held cell phone
- texting or emailing
- using electronic devices, such as laptop computers, video games, cameras, and video entertainment displays
- programming portable audio players
- entering information on GPS units
- reading printed materials in the vehicle
- writing, printing, or sketching
- personal grooming.

Types of emergency vehicles that are exempt

Under the *Traffic Safety Act*, an emergency vehicle includes police service vehicles, fire response units, ambulances and gas disconnection units responding to a call. Drivers of emergency vehicles will be able to use hand-held communication devices or other electronic devices only when acting within the scope of their employment.

Activities that are allowed for commercial drivers

These activities are not specifically restricted under the law:

- using two-way radios or hand-held radios, such as those commonly referred to as CB (Citizen's Band) radios, when escorting oversized vehicles, to contact one's employer, or when participating in search, rescue, and emergency management situations.

Display screens that are permitted:

- a GPS navigation system – as long as the system is affixed to the vehicle and programmed before you begin driving or the system is voice activated. You cannot hold the unit or manually enter information while driving.
- a gauge, instrument, device, or system that provides information about the vehicle's systems or the vehicle's location
- a dispatch system for transporting passengers
- a logistical transportation tracking system that tracks vehicle location, driver status or the delivery of goods for commercial purposes.

Dispatch computers such as those used in taxicabs or delivery trucks

Drivers who use dispatch systems for the transport of passengers or logistical transportation tracking devices for commercial purposes can still have mobile data computers installed and activated in their vehicles. All drivers should keep their focus on the road and, as such, drivers should not type information into these devices while driving.

'CB radios' or 'Mike Phones' are exempt for commercial purposes and search and rescue services

This legislation is not intended to interfere with well-established commercial operations or search and rescue efforts. Where this type of communication is required to communicate with the driver's employer or when participating in some type of emergency management situation, the use of what are commonly referred to as hand- held CB radios or 'Mike phones' are allowed.

This law is not about taking away tools for traffic safety. The use of hand-held radios to communicate extreme weather conditions or a hazard on the roadway, such as a collision, could fall under the "emergency" scenario category. Transportation and Economic Corridors recognizes that commercial drivers are professionals and anticipates that they will make good safety decisions when choosing to use public radio systems. As with all laws, enforcement officers ultimately have the responsibility to evaluate specific situations to determine if citizens are complying with the law.

Tour bus drivers

Tour bus drivers must be in compliance with the law and must not drive distracted. There are hands-free units, available to ensure compliance with the law, as well as innovative technology solutions to provide information to passengers.

Know the size of your vehicle

Size and weight restrictions of commercial vehicles

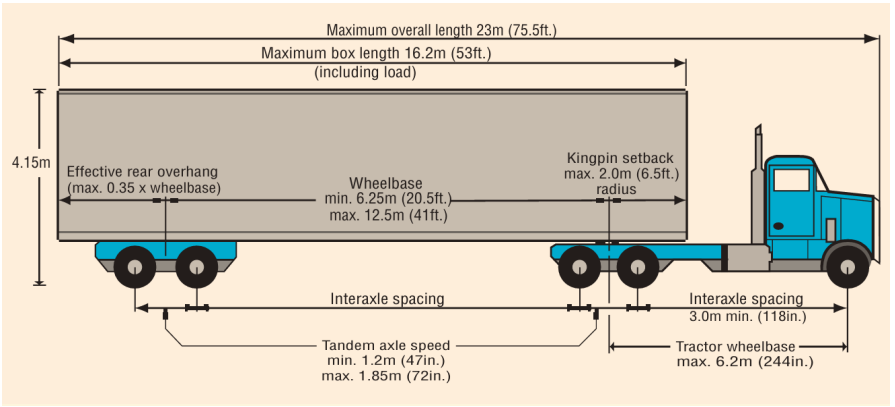
Commercial vehicles must not be more than the following dimensions:

- 2.6 metres in width

***Note**: If the vehicle is wider than 2.05 metres, clearance lights are required. These must be amber in the front and red in the rear.*

- 4.15 metres in height from the ground surface
- 12.5 metres in length for a straight truck or for a bus
- 14 metres in length for an intercity bus
- 6.2 metres in wheelbase length for a truck-tractor
- 23 metres in overall length for a tractor semi-trailer or truck and towed trailer combination
- 25 metres in overall length for Transportation Association of Canada (TAC) vehicle combinations consisting of A, B, and C trains.

A carrier must comply with all weight restrictions for the roads on which they operate. In Alberta, legal weights depend on different things such as the type of vehicle, the number of axles on the vehicle, the manufacturer's rating and the size of the tires on the vehicle.



No vehicle or combination of vehicles will be allowed to operate on a highway if the weight on a tire, axle or axle groups, or gross vehicle weight is more than what is allowed under the Commercial Vehicle Dimension and Weight Regulation (AR 315/2002), with the exception of operating under a special permit.

Specialized, oversized, or overweight equipment requires a special permit. The permit will have specific conditions on it. These conditions will state:

- the routes you may travel on
- the days and hours of travel
- the type of equipment that must be used
- anything else that is needed to prevent road damage and to ensure safety.

Size and clearance

Having knowledge of your vehicle height, width, and weight is important in having smooth trip. Plan your route ahead of time to avoid encountering obstacles or roadways where restrictions prevent you from safely reaching your destination.

- Know the height of your vehicle. Be able to recognize if your vehicle is too tall to pass through underpasses, bridges or tunnels. Signs may be posted on these structures to give their overhead clearances. Some areas may have check bars and warning devices installed to warn drivers.
- Know the width of your vehicle. External components such as side mirrors, anti-splash and spray devices, or clearance lights may be easily overlooked and damaged if the vehicle is driven through a structure that is too narrow.
- Know the length of your vehicle. Negotiating turns on narrow roads and in alleys. When making turns, be sure to leave enough room to avoid the rear of your vehicle striking the vehicle in the lane beside you. When leaving a curb, be aware that the rear of your vehicle must not go onto the sidewalk, as this will be a danger to pedestrians and cyclists, or may damage property such as poles or sign posts.

Be mindful that environmental factors may affect the clearance of your vehicle. Potential hazards include:

- Snow and ice build-up
- Debris or uneven roads due to construction
- Unmarked objects such as tree limbs, utility lines, canopies, roof overhangs, or other building protrusions.

How long does it take to stop a vehicle?

In order to stop a moving vehicle, a driver needs to perform three actions:

- See – a hazard
- Think – decide to stop
- Do – place foot on the brake pedal until vehicle stops.

The function of any braking system is to slow the motion of a moving vehicle. Heavy commercial vehicles take more time and more distance to stop than smaller vehicles. More braking force is needed to overcome their weight and forward motion.

The distance a commercial vehicle needs to stop is affected by the following four factors:

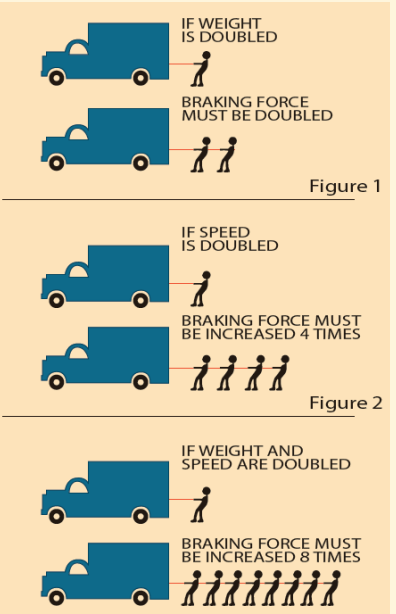
1. Traction. Traction is the friction between the road surface and the area where the tire contacts that surface. The amount of traction a vehicle has depends on:
   - the condition of the road
   - how much tire contact there is with the road surface
   - the condition and inflation pressure of the tires
   - the gross vehicle weight (GVW) of the vehicle.

The more traction the vehicle has, the less time and distance it will take to stop. There is the most traction just before all the wheels lock up. There is less traction when the wheels are skidding.

2. Brake condition. All the brakes on a vehicle must share the task in the same way. If one or more brakes are not properly aligned or maintained, the remaining brakes will have to generate more friction. This means that it will take longer to stop the vehicle.

3. Weight (GVW). A heavy vehicle, even though it has better traction, needs more time and distance to stop. When the weight is doubled, the amount of force needed to stop the vehicle is doubled, and it will take about twice as long for that vehicle to stop (Figure 1).

4. Speed. The greater the speed, the more time and distance are needed to stop. Figure 2 illustrates that doubling the vehicle speed means that four times the braking force is required to bring the vehicle to a stop. Figure 3 illustrates that if both the speed and weight are doubled, the amount of force required to stop the vehicle will be increased by eight times.



Stopping distance

The total stopping distance to bring a vehicle to a complete stop is measured from the time a driver realizes the need to apply the brakes until the vehicle comes to a full stop. The time it takes for a vehicle to stop is affected by four factors:

1. Perception time is the amount of time it takes a person to see a situation and realize there is a need to stop the vehicle. The average person's perception time is about three-quarters of a second, however, less experienced drivers are often slower to realize a danger exists. Perception time can also vary greatly depending upon the driver's visual search, level of attention, decision-making capability, degree of fatigue, and many other vehicle and/or environmental variables. Perception time can increase if a person is not feeling well physically or mentally. Perception distance is how far a vehicle travels during this time.
2. Reaction time is the amount of time it takes a driver to physically react to the decision to stop by releasing the gas pedal and applying pressure to the brake pedal. The average driver's reaction time is about three-quarters of a second. Reaction time will be slower if the driver is tired or has been drinking alcohol or using drugs. Reaction distance is how far a vehicle travels during this time.
3. Lag time is the amount of time it takes for the air brake system to respond after the driver has applied pressure on the brake pedal. Air brakes do not respond immediately because it takes time for the compressed air to flow through the system and apply the brakes, which takes about 4/10 of a second. Lag time distance is how far a vehicle travels during this time.
4. Braking time is the amount of time it takes for the vehicle to come to a complete stop after the brakes have been applied. Braking time depends on:
   - the force applied to the brakes
   - the condition of the brake linings and drums
   - the traction of the tires on the road surface
   - the vehicle weight and speed.

Braking distance is how far a vehicle travels during this time.

Total stopping distance is the sum of perception distance, reaction distance, lag time distance, and braking distance.

Another factor involved in stopping distances is the slope or grade of the road. A vehicle travelling down a hill will need a longer stopping distance than a vehicle travelling at the same speed on a level surface because of the effect of gravity. A vehicle travelling up a hill will stop in a shorter distance than a vehicle travelling the same speed on a level surface, again because of the effect of the grade.

Many factors such as the condition of the road, your vehicle, the vehicle's speed and your vehicle's condition and ability to stop, work in combination to determine total stopping time and distance. As a driver, you must attempt to minimize these factors to avoid a collision.

This is also why it is important to not drive when you are tired or have been taking drugs or alcohol.

The total stopping distance increases dramatically as your speed or load increases. For example, a 66 passenger bus at 45 kg (100 lbs) per passenger equals 3000 kg (6600 pounds) over the weight of the vehicle itself. It will take dramatically longer to stop this loaded bus than the average car.

Class 1 braking

General braking information

- When coming to a stop, do not leave your braking too late. Ease off the accelerator in advance of your stop to begin reducing your speed.
- When applying the brakes, press down the pedal using an even pressure and then ease off the pedal as the vehicle slows down. Just before the stop, release the brakes to avoid a sudden jerk or rebound. Then apply pressure to the brake pedal again to hold the vehicle while it is stopped.
- Do not pump (alternately applying and then releasing) the air brakes as this will result in a loss of air pressure. Pumping the brakes on a long downhill grade may mean that you do not have enough air pressure for the brakes to work properly.
- Avoid using the brakes too much going down hills. Downshift before going over the top of the hill. Use engine compression as a way to control your speed on steep grades.
- If there is a low air pressure warning, stop as soon as possible in a safe place. Increase the air pressure before continuing.
- Before going down a hill, test the brakes. Look at the air pressure gauge, apply the brakes, and check for abnormal air pressure loss. Do not proceed if there is abnormal pressure loss.
- If the trailer hand valve is used too much, particularly on steep hills, the trailer brakes may fail. Use of the trailer hand valve only is not recommended as it leads to a greater wear on the trailer brakes than the truck-tractor brakes. This causes unbalanced braking between the truck-tractor and the trailer which could cause the unit to jackknife.
- Always be sure the brakes are adjusted properly. If they are not, some brakes will have to work harder than the others. This could cause a skid.
- A driver must not pull any trailer that weighs more than 2,300 kg that is not equipped with brakes controlled by the driver.

Adjust seat and mirrors before you drive

Seat adjustment

Correct seat adjustment must be made before the vehicle is moved. This is essential for a safe, fatigue-free operation.

Sit in a neutral posture to support your spine, with your neck and back in an upright position.

Begin by adjusting the vertical position of the driver's seat. Adjust the seat so it is at the proper height to allow the left foot to rest on the floor without pressure on the underside of the leg.

Front to back horizontal adjustment is made while seated. Position the seat so that the right knee is slightly bent as the right foot rests on the accelerator.

To maintain the greatest control, keep both hands on the steering wheel.

Proper seat belt use

It is the law in Canada for drivers to wear seat belts at all times. According to Alberta law, all drivers and passengers are required to use seat belts where the assemblies are provided.

Exceptions may apply. For example,

- if a bus is not designed or equipped with seat belt assemblies by their manufacturers, or while reversing
- the driver of a taxi is exempt from wearing a seat belt while carrying a passenger for compensation or hire.

See Section 84(1) and 88(1) of the Vehicle Equipment Regulation (AR 122/2009) for exemptions to seat belt requirements.

Check that your seat belt is in working condition by ensuring the seat belt is not loose, damaged, or twisted. The seat belt must be adjusted to fit snugly and properly. The lap part of the belt must fit snugly across your hips. The shoulder portion of the belt should be centred on your shoulder. The shoulder straps must never be tucked behind your body or under your arm.

Wearing a seat belt is not only the law, but it reduces the chance of the occupant being killed or injured by 55%, if the vehicle is involved in a collision.

Mirror adjustment

Correct mirror adjustments are essential for the safe operation of a commercial vehicle. While seated, adjust the left and right mirrors to obtain optimum vision.

There are multiple types of mirrors for different types of vehicles, and different mirrors within the same vehicle. Mirrors should allow you to better view your blind spots and the “danger zone”.

The danger zone is an area around the vehicle where pedestrians and other objects are at the most immediate risk. It includes the entire area for approximately three metres (10 feet) around the vehicle. All mirrors should be viewed in a logical sequence to ensure a passenger or object is not in any of the danger zone areas.

The following are types of mirrors you may encounter and use as a driver.

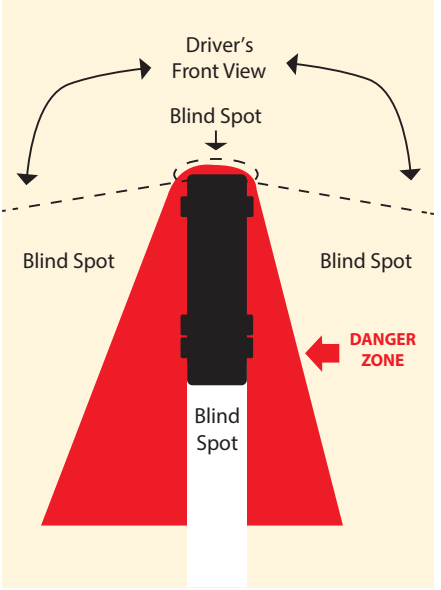
Crossover mirrors

These mirrors are mounted on both left and right front corners of the vehicle. They allow the driver to see the front bumper “danger zone” area directly in front of the vehicle. They also allow the driver to view the “danger zone” area to the left side and right side of the vehicle, including the front door and wheel area.

The crossover mirror provides a view of people and objects but does not accurately reflect their size distance and position from the vehicle. You must ensure these mirrors are properly adjusted to see:

- the entire area in front of the vehicle, from the front bumper at ground level to a point as close as possible to where objects or persons may be seen directly

- the right and left front tires touching the ground
- on a bus, the area from the front of the vehicle to the front door.



Convex mirrors

These mirrors are located above or below the outside flat mirrors. They are used to monitor the left and right sides at a wide angle. They provide a view of traffic, clearances, and passengers at the side of the vehicle.

These mirrors present a view of people and objects that does not accurately reflect their size distance and position from the vehicle. You should position the mirrors to see:

- a small portion of the entire side of the vehicle up to the mirror mounts
- approximate location of where rear tires touch the ground
- at least one traffic lane on either side of the vehicle.

Flat mirrors

Flat mirrors are mounted on the left and right at the front of the windshield. They are used to monitor traffic, check clearances, and check passengers on the sides and to the rear of the vehicle. Adjust the flat mirror vertically (up and down) to optimize the field of view to the side of the vehicle and to minimize the horizon.

There is a blind spot immediately below and behind each mirror and directly in back of the rear bumper. The blind spot behind the vehicle extends 15 to 45 metres and could extend up to 122 metres depending on the length and width of the vehicle.

Ensure that the left mirror is properly adjusted so you can see:

- 60 metres or four vehicle-lengths behind the vehicle
- the top and bottom of the vehicle
- a small portion of the sides of the vehicle.

Ensure that the right mirror is properly adjusted so you can see:

- 60 metres or four vehicle-lengths behind the vehicle
- the top and bottom of the vehicle
- a small portion of the sides of the vehicle.

Inside rear-view mirror

This mirror is mounted directly above the windshield on the driver's side area of a bus and used to monitor passenger activity inside a bus. It may provide limited visibility directly in back of the bus, if the bus is equipped with a glass-bottomed rear emergency door.

There is a blind spot area directly behind the driver's seat as well as a large blind spot area that begins at the rear bumper and could extend up to 100 metres or more behind the vehicle. You must use the exterior side mirrors to monitor traffic that approaches and enters this area.

Position the mirror to see:

- the top of the rear window in the top of the mirror
- all of the passengers, including the heads of the passengers right behind you.

When adjusting the mirror, first adjust the left mirror to show the left side of the vehicle along the right edge of the mirror. The rear portion of the vehicle, at ground level, is seen near the bottom of the mirror. The horizon line is seen three quarters of the way up the mirror.

Adjust the right mirror about four inches out from the side of the vehicle so that the right side of the vehicle is visible along the left, inside edge of the mirror. The horizon line is seen three quarters of the way up the mirror. Both mirrors need to be adjusted the same way.

General notes

The above are general guidelines for adjusting vehicle mirrors. Mirrors are designed to cover blind spots from the driver's seat and should be set to fit each individual driver. Mirrors will not be helpful if they are not adjusted properly.

Set the convex mirror to identify objects near the vehicle. Adjust the inside mirror to see through the rear view window of the vehicle if applicable, or on the restroom of a motor coach.

Practice good driving habits

Having good driving habits promotes the safe operation of a commercial vehicle. This includes driving with care and attention, following the rules of the road, being well rested, paying attention to your surroundings, and maintaining mental well-being.

Good habits are developed by consciously practicing the correct procedure to the point where you subconsciously do it right every time. Correct performance has become instinctive. Good visual habits, for example, are one of the most important tools available to the defensive driver.

Following distance between vehicles

Remember that the two-second rule is the minimum following distance for passenger vehicles and is accurate at any speed.

When operating a large vehicle, use the four-second rule to determine a safe following distance. Watch the vehicle ahead pass a fixed object, such as a telephone post, and start to count one-thousand-and-one, one-thousand-and-two, and so on. If you reach the object before counting to one-thousand-and-four, you are following too closely. You must slow down to increase the distance between your vehicle and the vehicle ahead.

Double and triple trailer units take up more space than other commercial vehicles. They are not only longer, but also need more space because they cannot turn or stop as quickly. Allow

more following distance. Make sure the gaps are large enough before entering or crossing traffic. Be certain you are clear at the sides before changing lanes. When weather, road, or traffic conditions are poor, double your following distance.

Managing emotions and distractions

Research on collisions indicates there are two generalized categories of errors that can lead to trouble while driving: recognition errors and decision errors.

Recognition errors

Recognition errors typically arise from some situation which the driver is not fully conscious of, or which the driver does not take sufficiently seriously. These can include errors such as:

- distraction (psychological, environmental situational)
- general inattention
- improper lookout (fixation).

Decision errors

Decision errors arise due to conscious factors which the driver does not consider significant. These can include errors such as:

- speed
- risk taking
- failing to obey traffic control indicators.

Both forms of error arise due to the mental or physical conditions of the driver.

There are numerous issues which can impact any individual's ability to operate a vehicle at their optimum capability. These may be on-going, such as health problems, money issues, or family issues; or immediate, such as distractions to your attention, time pressure, or poor conduct by others on the road.

Any of these may create a state of mind which takes a driver's attention from the primary task of driving and creates a situation in which an incident or collision becomes more likely. When emotions run high a person may feel 'hijacked' by emotions, and no longer feel calm and collected.

Consequently, managing your emotions is important for reaction time and safety.

A useful method of dealing with emotional situations as they arise is to cultivate the Stop, Drop and Process technique.

STOP – Stop and think before you act

- If you are in a situation where your emotions are building to a point where you may have trouble maintaining control, stop!
- Sometimes when we are in a highly emotional state, we act automatically, without considering the consequences or the best way to approach the situation.
- Learn how to identify the signs that you may be getting to this point.
- Take note of the physical feelings and thoughts that are associated with this emotional state, such as tension in the jaw, neck or face.
- When these sensations or thoughts arise, these become cues to stop and become conscious of your emotions and consider your response more carefully.

DROP – Reduce the intensity of your emotions

- In an extremely emotional state, it becomes very difficult for a person to think clearly and rationally. The body's 'fight-or-flight' response is triggered (i.e., we want to act quickly to resolve the situation or run away from it).
- Before you begin to think through a situation, you need to calm down and reduce the emotional intensity.
- Engage in a repetitive action (e.g., counting and deep breaths). Any repetitive action can help you focus and calm your attention.
- Think about something that triggers a positive feeling.
- Breathe deeply. Concentrate on your abdomen and breathe in through your nose while counting to five, hold it briefly, and breathe out for a five count, focusing on the feelings of the air and tension leaving your body. Repeat for a few minutes.
- Now you are ready to rationally consider the situation and your response.

PROCESS – Think about it

- Begin with identifying the emotions you are feeling. To manage them, you must first be able to accurately identify them. Are you angry? Overwhelmed? Afraid? Ashamed? Frustrated? Annoyed? Uncomfortable? Helpless? Overconfident?
- Sometimes the surface emotions are masking deeper reactions that are more difficult to identify, but which are important to the situation and understanding your reaction.
- Identify the source of these feelings. Why are you feeling the way you are? What underlying issue may need to be addressed? You can increase your emotional awareness by going 'inside'.
- Once the feelings are under control, decide the best way to proceed, given your ultimate goals and your values.

With repeated practice, the Stop, Drop and Process technique can become a healthy habit for dealing with emotionally challenging situations. Sometimes these situations arise unexpectedly while driving. Remember, it is never a mistake to pull over in a safe location to deal with a difficult situation and proceed only when emotions have calmed.

Managing your speed

It is the responsibility of a commercial driver to know the speed limit of the roadway and for the driver to adjust the speed of the vehicle according to the amount of traffic, mechanical condition of the vehicle, prevailing atmospheric condition, and nature and use of the road.

Speeding reduces a driver's ability to steer safely around curves or objects in the roadways, and reduces the driver's ability to have proper control of the vehicle. Speeding also extends the distance necessary to slow down or stop a vehicle in the event of dangerous situation. The faster the speed, the less time there is to react situations around you.

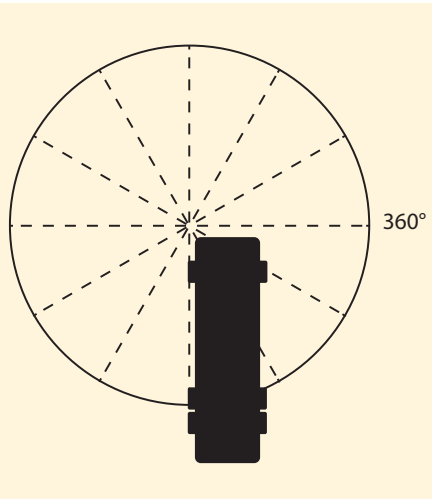
Space management

While driving, you should make a conscious effort to ensure there is enough clearance overhead at all times. A major cause of damage is hitting overhead objects. Drivers should watch out for low-hanging wires, signs, etc.

As a driver, it is important for you to know the height of the vehicle you are driving. Slow down and drive carefully when you are not sure about the clearance. Turn on hazard lights to warn other drivers that you are slowing down. While height of bridges or overpasses are often posted, clearance may be reduced when the road is repaved or there is snow pack.

Zone of awareness

Many drivers are content to limit their awareness to the things they can observe by looking through the windshield, with an occasional glance in their mirrors. A defensive driver, however, realizes a hazard can develop from any angle and that zone of awareness must include a full 360˚ circle around the vehicle as well as above and below the vehicle.



While most hazards will appear from the front, rear, or side of the vehicle, many drivers have lost control by not being aware of the road condition under their vehicle. Similarly, drivers have lost the tops of their campers, buses, or trailers in parking structures underpasses by not paying attention to hazards above the vehicle.

Remember, the earlier a potential hazard is detected, the more time there is to avoid any problem that develops. Therefore, your zone of awareness should be as wide as possible for the circumstances.

Our zone of awareness contains clues to detect any potential hazards. We can detect these through the use of our senses.

Sight

Good vision and good visual habits are essential to safe and defensive driving. Vision can change so gradually that it is easy to be unaware of a vision problem until it is too late. Make it a practice to have an eye examination on a regular basis.

As speed of travel increases, there is a corresponding reduction in peripheral vision. At a standstill, most people, while looking straight ahead, can see objects appearing to the side without shifting their gaze. This gives us a range of vision covering approximately 180 degrees. At highway speeds, this range of vision is reduced, so the effect becomes somewhat like driving through a tunnel where peripheral vision is limited.

It is also important to remember that a driver tends to steer toward whatever the driver is looking at. This helps a driver navigate curves. However, if a driver's attention is focused on an off-road object ahead, the driver will tend to gradually turn toward that object and, if the driver does not react in time, will drive off the

road. For this reason, it is important to keep your eyes moving, scanning the "big picture".

Additional good practices using your sight are:

- Focus farther ahead as speed increases
- In an urban area, view the road ahead one full block
- Focus farther down in rural areas than in urban areas
- Your gaze should be approximately 12 seconds ahead of your present position
- Scan 360 degrees and shift your gaze continuously; this includes checking dashboard gauges, seeing if any warning lights have come on, and scanning all mirrors
- Check mirrors every five to ten seconds
- At night, when meeting oncoming vehicles with bright headlights or headlights on high beam, drivers should shift their gaze well ahead and to the right edge of the road
- Use the glare reducing setting on your rear-view mirror, if available
- Keep vehicle windows clean to reduce glare
- Maintain an unobstructed view
- Vegetation, buildings, trees, parked vehicles, or any roadside obstruction that obscures vision should be treated as a hazard, potentially requiring you to stop to assess the situation before proceeding
- Be aware that other vehicles in the adjacent lane may obscure your vision
- Pay attention to traffic ahead that may be stopping for a left turn or a pedestrian
- Remember that traffic controls, congestion, and pedestrian traffic on urban roads makes urban driving more difficult and demands a greater need for attention.

Hearing

The sound of car horns, train whistles, children playing, and the sound of other vehicles are all examples of messages we receive through hearing and are indicators of potential hazards.

Listening to the sound of your own vehicle can help you identify maintenance problems that can lead to a collision if left unattended.

To gain the greatest advantage of hearing as a hazard identifier, the driver must not be distracted with excessively loud noise from the stereo. Other in-vehicle noises should also be kept at a low level.

Smell

Smell may give the driver early indication of a possible problem with their vehicle, such as the smell of hot oil, rubber, or anti-freeze. Early detection of a vehicle problem allows the driver more time to find a safe location to park and have the problem dealt with. The signals tend to be subtler and the driver must learn to be more sensitive to these cues.

Feel

As we drive, our bodies are in contact with various parts of the vehicle. For example, our hands are on the steering wheel, our body is in the seat, and our feet are on the pedals. The vibrations caused as the wheels roll over the road surface are transmitted through the

vehicle to our bodies. These vibrations can tell us much about the road surface and how our vehicle is 'holding' the road.

Managing blind spots

Virtually all vehicles have blind areas. For this reason, it is good practice to adjust the position of your commercial vehicle relative to other traffic, in order to stay out of another driver's blind spot whenever possible.

The location of blind spots depends on the vehicle.

- A car typically has blind spots at the sides near the rear of the vehicle, meaning the driver cannot see anything in these areas by looking in correctly-adjusted mirrors.
- Due to the size of bicycles and motorcycles, they can easily be hidden in your vehicle's blind spots and are even quite difficult to spot in a wide-angle mirror. They are far too often only seen at the last moment. Extra caution needs to be taken around bicycles and motorcycles.
- There are large blind spots both behind and to the side of large vehicles. The "right turn squeeze" could occur if a motorcycle or bicycle rider is positioned between a large vehicle that is turning right and the curb. In this position, the driver of the large vehicle may not see the cyclist.

Drivers may also be unable to see objects that are directly behind, directly in front, or directly beside the commercial vehicle. These are called blind areas. Vehicles in which the driver sits very high may not be able to see anything low to the ground in front or to the sides near the front of their vehicle.

Taking care near parked vehicles

Driving beside parked vehicles is potentially hazardous because the visibility is partially obstructed. Hazards often appear when there is little time or space for evasive action. Three key sources of hazards are:

- The space between parked vehicles through which pedestrians and animals may suddenly dart into the street.
- The parked vehicle may suddenly pull out into your path without warning.
- Occupants of parked vehicles may open their doors without looking first.

Positioning your commercial vehicle at least 1.5 metres out from a parked vehicle will place your commercial vehicle beyond the arc of a door or a parked vehicle, should it suddenly be opened.

You should also watch for clues that a parked vehicle is preparing to enter the lane of traffic:

- Exhaust fumes will indicate the engine of the parked vehicle is running and that it is potentially ready to move.
- Back-up and brake lights may indicate that a parked vehicle is preparing to enter traffic.
- Front wheels pointing toward traffic may indicate the parked vehicle is ready to leave the space or manoeuvring in preparation to leave.
- A person behind the steering wheel may indicate that a parked vehicle is ready to leave a parking space.

Defensive driving

While a properly maintained vehicle is a very valuable tool in the prevention of collisions, the most influential factor is the driver. It is the driver's skills, knowledge, habits, attitudes, physical and mental condition that are major factors in either being involved in or avoiding a collision.

Elements of defensive driving

In order to successfully avoid collisions a commercial driver requires a high degree of knowledge, alertness, and foresight, and must always exercise good judgement and skill.

- Knowledge – This can come from many sources, including driver guides, printed materials, and courses. A great deal of knowledge about driving can be acquired through experience, but experience is not necessarily the best teacher as bad habits may develop and are hard to break. Traffic safety experts are convinced that knowledge of driving should be acquired through a planned program.
- Alertness – This is the habit of keeping one's attention focused on driving and free of distractions. It includes the attitude of detecting hazards and the ability to avoid collisions. Being fully alert requires the use of vision, touch, smell, and hearing to receive and interpret various messages. Mental alertness can be developed consciously and is improved with practice.
- Foresight – This is the ability to anticipate and prepare for mishaps. It consists of being able to assess traffic situations as far ahead as possible, to anticipate how they are likely to develop, and to decide whether or not they will present a hazard.
- Judgement – Good judgement implies recognition of the alternatives present in any traffic situation and the ability to act in time to avoid a collision. Good judgement is dependent not only on knowledge and experience but also intuition.
- Skill – This is the ability to manipulate the controls of the vehicle to successfully perform basic traffic manoeuvres such as turns, passing, reversing, parking, etc. There is a correct way to execute each of these skills. Skills are developed through learning how do them the right way and then doing them the right way every time.

Basic collision prevention formula

Following the basic collision prevention formula while driving will help you avoid collisions and maintain safety on the road. The basic formula is:

- Recognize the hazard
- Understand the defence
- Act in time

Most people practise the basic collision prevention formula subconsciously while they are driving. However, there is a tendency for minds to wander and daydream and when this happens the process stops. In this state we can easily miss the detection of a hazard. When that happens, an easily avoided problem can rapidly become a full-blown emergency.

Virtually every driving situation has potential hazards. In order to protect against hazards, you must be aware of what is happening around you. The actions of others, the condition of the road, parked cars, visibility, etc., are all part of that process.

Steps for avoiding hazards

One of the most important aspects of defensive driving is recognizing impending hazards before they become a problem. Early recognition provides drivers the time needed to avoid trouble. It is vitally important the driver recognizes and becomes immediately aware of the surroundings while driving.

The key steps for avoiding hazards are as follows:

- Identify – The driver must be able to identify any potential hazards or dangerous situations.
- Predict – Predict what may happen next and all the possibilities.
- Decide – Decide which course of action is necessary in order to avoid a collision.
- Execute – Put the plan in action.

Commentary driving

One effective method of hazard detection is to practise commentary driving. Commentary driving is a technique where the driver actually verbalizes (talks about) their main observations and interpretations of the events developing around and ahead of their vehicle.

An example of commentary driving is, "Traffic light is stale green; oncoming car signalling left; walk light just flashed off; pedestrian crossing."

Commentary driving is extremely useful when practised because:

- It creates an awareness of the vast number of things a driver should be watching for and thinking about.
- It assists in the development of good visual skills and helps the driver resist common distractions.
- If done aloud with an instructor, it helps the instructor evaluate progress and instructor effectiveness. It also shows the instructor where the driver's attention is focused and how far ahead the driver is looking.

Commentary driving can be used in combination with the steps for avoiding hazards – identify, predict, decide, execute.

For example:

- Identify – *"Speed is 50 km/h, cars are parked on both sides of the street, no other vehicle traffic is in sight front or rear, there are no side streets, children are playing ball one half block ahead on the right and road conditions are good."*
- Predict – *"Child could run out onto the road from behind parked cars."*
- Decide – *"If the child runs out from the right, sound horn, apply brake."*
- Execute – *"Reducing speed now, preparing to brake if necessary."*

This example is fairly simple. Imagine how this situation would have been complicated if there was oncoming traffic and a car behind you was tailgating and attempting to pass. Practicing this approach will better prepare you when a real emergency arises.

With regular practice, 'real observation' will become habit and you will not find it necessary to speak out loud. Silent but 'active' observation is just as effective for collision avoidance.

Avoiding road rage situations

We have almost all found ourselves in unpleasant situations involving abusive gestures or language from another driver who takes issue with how we drive. Anxiety and frustration can quickly provoke an aggressive or careless driver who tailgates, speeds, or fails to yield the right of way, among other behaviours.

Aggressive driving behaviour may lead to incidents of road rage where motorists are threatened and/or subject to retaliatory actions by angry motorists. If people drive responsibly they will reduce the chances of conflict on the road and help make our roads safer.

Experts recommend the following tips for drivers to help avoid road rage conflicts:

- Plan your route in advance. Some of the most erratic and inconsiderate driving occurs when motorists are lost.
- Make a conscious decision not to take your problems with you when driving.
- Combat the warning signs of stress by getting fresh air and breathing deeply and slowly.
- Avoid heavy meals, which tend to make a person drowsy.
- Drive in a courteous and considerate manner. Give way at busy intersections and where traffic lanes merge.
- Do not compete or retaliate. If someone's driving annoys you, do not try to 'educate them'. Leave traffic enforcement to the police.
- Do not take other driver's mistakes personally.
- Avoid honking your horn unless absolutely necessary and, if you must, tap it lightly.
- Say, "Sorry" if you make a mistake. An apology can reduce the risk of conflict.
- If you are being physically threatened, stay in the vehicle and secure the doors. If you have a cell phone, call the police or use the company's two-way radio to have the police come. Use your horn and lights to attract attention.
- If you think you are being followed, drive to a police station or vehicle yard.

Preventing fatigue

Driving while exhausted can make you a road hazard. Drowsy driving is as dangerous as impaired driving because it slows a driver's reaction time, decreases awareness, and can impair judgement like alcohol or drugs.

Lack of sleep is one of the most common causes of drowsy driving. Other contributing factors include driving alone, driving long distances without rest breaks, and driving through the night or at times when the driver normally sleeps. Taking medication that increases sleepiness or drinking alcohol also contributes to driver fatigue.

People most at risk for falling asleep at the wheel are shift workers, commercial drivers, people with untreated sleep disorders, teenagers, and young adults. Fatigue-related crashes are common in young drivers because they tend to stay up late, sleep less than they should, and drive more often at night.

Warning signs of driver fatigue

- yawning
- inability to keep eyes focused and head up
- having wandering, disconnected thoughts
- driving the past few kilometres without remembering them
- drifting between lanes, tailgating or missing traffic signs
- noticing a vehicle in the rear view mirror that seemed to appear out of nowhere.

Most fatigue-related collisions happen between 1 - 4 p.m. and early in the morning between 2 - 6 a.m. Typically, fatigue-related collisions occur at higher speeds and can result in drivers running off the road or vehicles colliding head-on with other vehicles or stationary objects.

How to reduce driver fatigue

Turning up the radio, opening a window, drinking coffee, chewing gum, or eating will help reduce driver fatigue for short periods of time, but the following actions will help prevent driver fatigue:

- Become aware of your own biological clock and avoid driving during your body's down time.
- Stop if you become sleepy while on the road.
- Get plenty of sleep the night before a long trip.
- Avoid working all day and then driving all night. Stay overnight rather than driving straight through.
- Schedule a break every two hours or every 160 km. Stretch or take a walk to get some fresh air.
- Take a mid-afternoon break. Have a 20-40 minute nap.
- Travel with an awake and alert passenger. Having someone to chat with will keep the driver awake and the passenger can also let the driver know if they are showing any signs of fatigue.

5

Basic Commercial Vehicle Operations

Forward driving

Driving on grades

Driving up grades

Move to the right and maintain a safe speed. When shifting becomes necessary, shift one shift range at a time (manual transmission). Observe the engine temperature, oil pressure and air pressure more frequently when driving up hills to detect dragging, pulling and overheating. Maintain a safe speed at all times. Never pass a vehicle on an upgrade on a two-lane highway.

Driving down grades

Before proceeding down a grade, check the system air pressure and cover the brake. Stay to the right while proceeding down the grade, maintaining a safe vehicle speed as required to control the vehicle without overheating the brakes or depleting the air pressure.

When driving down grades use lower gears as the main method to control speed. Apply brakes moderately or intermittently on downgrades to prevent overheating them. A safe speed is one that allows the driver to stop the vehicle at any time if a hazard is encountered while descending the hill. Never pass a vehicle on a downgrade on a two-lane highway.

A vehicle may be equipped with engine or transmission retarders which assist in braking. Engine or transmission retarders may also be used when descending steep grades; however, drivers should not use engine or transmission retarders where prohibited or under poor weather or road conditions.

Lane positioning

Selecting the proper lane, positioning yourself within the centre of the lane, and then making adjustments to your position to suit the current circumstances, are skills that requires a great deal of practice. As you continue to practise you will improve your ability to maintain adequate separation distance between your commercial vehicle and other vehicles and pedestrians.

On a multi-lane highway, it is recommended that a bus or truck be positioned in the right lane or the lane closest to the shoulder of the road. This will leave the driver an escape to the right, if they need one to avoid a collision.

Lane changes

Lane changing poses additional hazards. Only change lanes when necessary. Always check for clearance by looking out the windows, and also using both mirrors, to be sure there are no vehicles beside or behind your vehicle.

Give special consideration for the speed at which vehicles are travelling behind your commercial vehicle, to ensure they will not overtake your vehicle once the lane change has begun.

Always signal intent with at least four flashes of the turn signal before beginning the lane change. If the lane change involves passing another vehicle, when on a multiple lane highway, maintain a minimum four-second following distance under ideal road conditions. Once you are in the desired lane, cancel the turn signal within about 5 seconds after completion.

Negotiating intersections

When approaching any intersection, use "KNOW-SHOW-GO":

KNOW

Expect the unexpected. Decide in advance what you need to know at the intersection. Any indecision on your part can confuse other drivers and cause a collision.

SHOW

Signal your intentions well in advance and be in the proper lane.

GO

Proceed through the intersection without hesitation, when safe. It is important to keep in mind that other uncontrolled traffic access locations are considered intersections as well, such as side roads that enter onto highways, driveways, and alleyways. Distractions from pedestrians, cyclists, and animals are additional hazards.

Be prepared to yield at all times. With any intersection, if your visibility is obstructed for any reason, you may be required to stop prior to proceeding.

At all intersections:

- Never assume another driver will yield to you when required. Approach each intersection with your foot off the gas and covering the brake.
- As you approach an intersection, look left, then right. Prior to going through the intersection check again left, then right. If parts of your vehicle or your mirrors block your vision, check carefully around them before you proceed.
- Proceed only when safe to do so, even if you have the right of way. You cannot count on the other driver always obeying the rules.
- It is never a good idea to change lanes in an intersection.
- Never pass a vehicle that is stopped at an intersection until you are sure it is not stopped waiting for a pedestrian to cross.
- Never assume a vehicle stopped at the intersection and signalling left is only waiting for oncoming traffic to clear. There may be a pedestrian crossing as well.

Crossing in Urban Areas

In an urban area the following procedure will help you travel safely through each intersection and will get you into the habit of looking fully around your vehicle:

- Depending on visibility, take your foot off the accelerator and cover the brake if needed.
- Check mirrors and be aware of traffic following you. Prior to entering the intersection, check left then right for traffic indicators and controls, pedestrians, and other vehicles.
- Make certain no vehicle approaching is about to turn left in front of you. If clear, check to the left and right once more, and proceed through the intersection when safe.
- Scan the area to determine the point-of-no-return. This is the point at which you will no longer stop if the lights turn amber.
    - There is no exact point but there is an area or range a short distance before the intersection where a driver must decide if it is possible to stop safely before the crosswalk or intersection when the lights are amber.

- Deciding factors include: speed of the vehicle, road conditions, traffic volume to the front, rear and side, and visibility.
- The point-of-no- return requires good judgement and experience when making the decision to stop or proceed.

- Between intersections, watch for traffic changing lanes or entering your lane from alleys or driveways.
- Once you have passed the intersection, check mirrors again for any change in traffic patterns behind you. If you plan to turn at the next intersection, position yourself so you are ready to turn. Look for pedestrians that may be crossing ahead.

Traffic Lights

When approaching an intersection, note the colour of the traffic light (fresh or stale green). This is a very important part of deciding how to handle the traffic light.

- A fresh green light is a light that is seen turning green.
- A stale green light is one that was green before it was seen, or one that has been green for quite a while. Scan to see if the "Do Not Walk" light is activated, if one is present. At intersections without a pedestrian walk light, cover your brakes and be prepared to stop.

Engage in visual lead time techniques and observe traffic lights from afar. Scan 12-15 seconds ahead of you.

- If the traffic light is fresh, continue within the speed limit, but be aware that the light may turn stale. If you decide to proceed through the light, continue to check mirrors until the vehicle has cleared the intersection.
- If the traffic light is stale, check the mirrors and cover the brake. The stale light is the first warning that it will soon change to amber. Covering the brake reduces reaction time. Your focus will also be appropriately placed on planning a possible stop, as opposed to running the light or slamming the brakes.

When approaching the traffic light, an amber light should be treated as "prepare to stop", so covering the brake is a good idea. If your vehicle is already in the intersection (waiting to turn left) when the light turns amber, the amber light means "clear the intersection".

When stopped at a red traffic light, always look left, centre, right, and left before proceeding. This defensive driving technique will prevent a collision if another driver is running the red light. Keep the wheels in proper position and two hands on the wheel. Plan to stop. It is not uncommon for drivers to proceed through an intersection when a traffic light has turned to amber (yellow) instead of slowing or preparing to stop.

Look around for walk/wait lights and any hazards such as a blocked view, blocked lane, parked vehicles, other vehicles, pedestrians or any other conditions between your vehicle and the intersection. Always yield the right-of-way to crossing traffic.

Entering and exiting roadways

Merging

Merging is done when two roadways join into one and the traffic on the main roadway must cooperate to allow enough space for vehicles to enter from the merging lane.

Merging is a shared responsibility between the vehicles joining the roadway and the vehicles already on the roadway. Neither the merging vehicle nor the vehicles already on the highway have the right-of-way.

Entering traffic

When entering traffic from a curb or loading zone, signal intent at least four flashes in advance, check mirrors, and look directly out the windows to ensure path is clear before starting to move. Stay in the lane nearest the curb until reaching appropriate speed.

When entering traffic from an alley, side street, driveway or terminal, come to a stop before entering a cross street and proceed with extreme caution.

When entering highways, freeways, and other restricted access roads, signal your intent and use mirrors and direct view to ensure the path is clear in the right lane. Keep glancing at the gap in traffic that you chose, to ensure you are making the necessary speed and timing adjustments to safely merge into traffic.

When it is safe and legal to merge, move into the gap after you are past the solid white line of the acceleration lane. Maintain your speed at or near the speed of the other vehicles and cancel signal. Avoid reducing your speed abruptly or stopping when merging. Stay in the right lane until matching the speed of other traffic and only change lanes when necessary.

Exiting a roadway

The following tips can help you exit a major roadway or highway safely:

- Plan ahead. Be in the proper lane well before you reach your exit.
- Use your turn signal well in advance of the exit, to alert the drivers behind you.
- Move into the deceleration lane as soon as space is available, if there is one.
- If possible, do most of the slowing in the deceleration lane. Some deceleration lanes are short. You may need to start reducing your speed while still on the highway.
- When you have exited, ensure your signal light is turned off.
- If you miss your exit, do not stop. Continue to the next exit and make plans to return to your route. Do not stop and reverse on the highway, the emergency stopping lane, or the shoulder.

Weave zones

On some roadway interchanges, there are places where the highway entrance and exit use the same lane.

These areas require caution and cooperation because vehicles share the same lane to slow to exit the highway, while other vehicles are using it to increase speed to enter the highway. The area that these vehicles share is called a weave zone.

In weave zones, control your speed and the timing of your lane change to merge with other traffic. This requires skillful use of time and space. Use caution in these zones to ensure safe highway exiting and entering for all vehicles.

Be aware of your surroundings

Maintain awareness of what is happening around you as you drive.

- Scan mirrors, the road ahead and behind, paying attention to blind spots.
- Do not engage in any activity that may take away your focus from driving.
- Be mindful of “danger zones” around your vehicle where pedestrians and other vehicles may be present. For example, there is a danger zone approximately three metres (10 feet) around a bus.

It is also important to be courteous towards others on the road. You must also keep in mind that others on the road have different circumstances and habits.

Other Vehicles

- Smaller vehicles may become impatient when driving behind a commercial vehicle. When being passed, slow down to allow the smaller vehicle to move safely and quickly ahead of you.
- Use extra care when sharing the road with motorcycles. Their smaller size means they can be more difficult to spot and in the event of a collision, they are more likely injured because they are less protected.
- Sometimes a motorcycle’s turn signals can be hard to see. Watch the rider for clues. If the rider does a shoulder check, they may be intending to change lanes or turn.
- When turning left, watch for oncoming motorcycles. They can be hard to see, especially in heavy traffic, at night, or at dusk. It may also be difficult to judge the speed of the motorcycle.
- Be aware that motorcycle riders will often move within their lane to avoid road hazards such as potholes, and to maintain a space cushion from other vehicles.

Pedestrians

- When pedestrians indicate their intention to cross the street, you must stop your vehicle safely before the crosswalk and allow them to cross.
- When a pedestrian has entered a marked or unmarked crosswalk, you must yield the right-of- way.
- When stopping for a pedestrian at a crosswalk, stop far enough back (about two to three car lengths) so that traffic in another lane will be able to see the pedestrian and have time to stop.
- Never pass another vehicle when you are approaching a crosswalk. There is always a chance that the other vehicle is slowing or stopping for a pedestrian. If amber lights are flashing, the required speed limit is 30km/h.
- Not all crosswalks are marked, but the rules of pedestrian safety should be followed at all intersections.
- Be considerate of visually impaired pedestrians. Some will have a white cane or guide dog.
- At night, do not over-drive your headlights. This means you should drive so you are able to stop your vehicle within the distance you can clearly see with your headlights.
- When it is dark, be alert for pedestrians. If they are wearing dark clothing, they can be difficult to see from a distance.

- Children can be unpredictable. In residential areas, watch for children around parked vehicles, riding bikes or playing on the street. Glance under parked vehicles ahead on both sides of the road to check for children's feet, toys, and bicycle wheels. These provide warning that you may need to stop.

Cyclists

- Cyclists are required to ride as close as practicable to the right curb. However, they may need to ride further out when avoiding drainage grates, potholes, debris, gravel or sand, wet or slippery surfaces, and rutted or grooved pavement. Be aware of the roadway conditions that may affect a cyclist.
- When passing a cyclist, change lanes like you would for other vehicles.
- When you are preparing to turn right, watch for cyclists who may ride alongside your vehicle. Remember to check to your blind spots to the right.
- Before moving away from the curb, check for cyclists who may be riding past your vehicle.
- Do not follow too closely behind cyclists. They do not have brake lights to warn you when they are stopping.
- Be alert for children on bicycles. They may lack the necessary knowledge and skills for safe cycling around traffic, and may not be aware of all the dangers. Children on oversized bicycles are at risk of losing control.

Steering and turning

It takes different skills and knowledge to turn a large vehicle compared to turning a passenger vehicle. Generally, it requires much more room to perform the same types of manoeuvres. Traffic patterns are also becoming more complex, particularly in urban areas, necessitating added skill and judgement on the part of a driver to turn and position a commercial vehicle safely.

To start, have a look at the general turn rules that are explained in the Driver's Guide to Operation, Safety, and Licensing book.

Off-tracking

In any vehicle where the rear axle cannot steer during a turn, the rear tires will follow a different path than the steering tires. This is called off-tracking. There are two types of off-tracking:

1. Low speed off-tracking is common when driving in a city. In low or moderate speed turns, the rear tires are pulled inward of the steering path. The longer the wheelbase of the vehicle or the tighter the turn, the more off-tracking occurs.
2. High speed off-tracking is the effect of centrifugal (outward) force. It is seen when a vehicle travels at higher speeds, and the rear tires pull outward from the steering path during a turn. When you are driving a large vehicle, use a moderate speed when entering curves on open highways. Otherwise, you may encounter serious high-speed off-tracking that may result in a dangerous situation.

Remember the off-tracking tendencies of a large vehicle, and that it has a wider turning radius.

Making turns

Always use both hands to steer the vehicle.

The hand-over-hand steering method is recommended. One hand pushes the steering wheel up, across and down, while the other hand reaches up to the top of the wheel and pulls down. This action is repeated grasping the wheel at the top again.

***Note**: Letting the steering wheel spin freely when recovering from a turn is not acceptable. You must stay in control even when recovering from a turn.*

Prepare to make the turn:

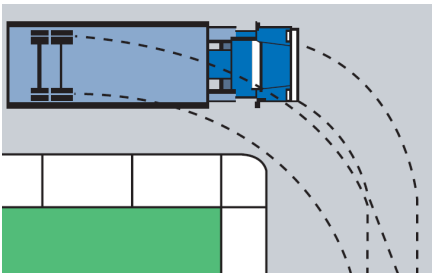
- Give the proper right or left-turn signal approximately 30 metres from the turn in urban areas, or approximately 100 metres in rural areas.
- Reduce speed of the vehicle and downshift to the appropriate gear needed to execute the turn (manual transmission).
- Position the vehicle in the appropriate lane, depending on the direction of the turn.
- Check for clear right-of-way by looking for potential conflict with other traffic, cyclists or pedestrians.
- Scan left, centre, right and left again, before making your turn.
- Check for traffic signals or signs that are directed at you plus be aware of signs or signals applying to cross-traffic.
- If stopped waiting to turn left, keep your front wheels pointed straight ahead and the brake pedal depressed to ensure:
  - your brake lights are on and you are stopped
  - if the vehicle is struck from behind, you will not be pushed into oncoming traffic.

Right turns

Take the right-most lane available.

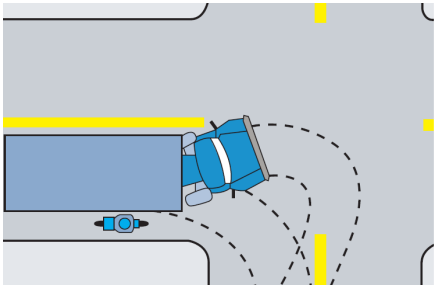
Be aware that, for every turn of the steering wheel, the rear wheels will follow a shorter path than the front wheels. Allow for this low speed off-tracking on every turn. Otherwise, your vehicle could hit another vehicle, or stationary object, or run over a curb and hit a pedestrian.

If the street is narrow, drive well into the intersection before starting the turn. You might need to go over the centre line of the street you are entering or into the second traffic lane. Whenever making a turn, be cautious and ensure it can be done safely.



Check the right and left mirrors as you are turning for vehicle swing and clearance.

Look for smaller vehicles and cyclists that may try to pull along the right side of your vehicle during the turn.



Make the turn smoothly.

Never shift gears during the turn.

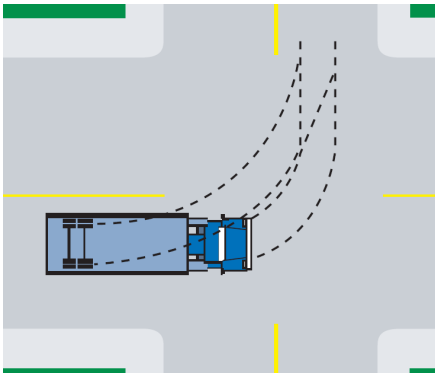
Looking well down the driving path, at least one block, continue recovering the steering wheel using the hand-over-hand method.

Check that your turn signal has been cancelled once the turn is complete.

Left turns

Take the appropriate turning lane:

- Take the left-most lane available on a single-land turn (unless directed otherwise by arrows on a traffic sign or markings on the road surface).
- Take the turn lane to the right (outer) on a dual-lane turn (unless directed otherwise by arrows on a traffic sign or markings on the road surface).



When turning left, ensure your vehicle's turning arc is wide enough to allow the vehicle to off-track on the left side without crossing the centre line. Your turn must be wide enough to prevent the vehicle from cutting the corner and hitting another vehicle. Complete the turn by driving to the right side of the centre line of the road entered.

When turning left off a two-lane highway, make a quick shoulder and mirror check to ensure you are not about to be passed by an overtaking vehicle.

Check the right and left mirrors as you are turning for vehicle swing and clearance.

Make the turn smoothly.

Never shift gears during the turn.

Looking well down the driving path, at least one block, continue recovering the steering wheel using the hand-over-hand method.

Check that your turn signal has been cancelled once the turn is complete. After completing a left turn on a multi-lane road, resume speed, activate your right-turn signal, and move into the right lane as soon as practical.

Special information for making turns of Class 1 and Class 3 vehicles

When preparing to make a turn for a Class 1 or Class 3 vehicle, do the following:

- Give the proper right or left-turn signal approximately 30 metres from the turn in urban areas, or approximately 100 metres in rural areas.

- Reduce speed of the vehicle and downshift to the appropriate gear needed to execute the turn (manual transmission).
- Importantly, slow the vehicle down to the necessary speed and then 'power' through the turn.
  - This is especially important on wet, muddy, icy, snow covered or graveled road surfaces.
  - Braking in a turn – or hard acceleration – can lead to a jackknife situation.
  - Instead, providing power will 'pull' the trailer around the turn. This is also applicable to negotiating curves.
- Position the vehicle in the appropriate lane, depending on the direction of the turn.
- Check for clear right-of-way by looking for potential conflict with other traffic, cyclists or pedestrians.
- Scan left, centre, right and left again, before making your turn.
- Check for traffic signals or signs that are directed at you plus be aware of signs or signals applying to cross-traffic.
- If stopped waiting to turn left, keep your front wheels pointed straight ahead and the brake pedal depressed to ensure:
  - your brake lights are on and you are stopped
  - if the vehicle is struck from behind, you will not be pushed into oncoming traffic.

Curves

When large vehicles enter a curve, the rear wheels will off-track closer to the curb than the front wheels. To mitigate this off-tracking, you must lead your turning arc of the front wheels according to how sharp the curve is and the vehicle's off-track. Mirrors should also be used to monitor off-tracking.

Enter a curve at a speed that does not require braking, but does allow you to gradually accelerate while in the curve.

When entering a curve, centrifugal force acts on the vehicle. This force pushes the vehicle towards the outside of the curve.

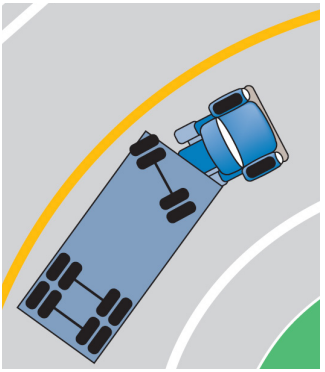
Traction resists centrifugal force. The amount of traction your wheels have with the road's surface determines the amount of control that can be maintained over the vehicle.

When speed is increased, both momentum and centrifugal force are greater. When entering a curve too quickly, these forces may be greater than the traction that is present. This can cause a loss of control of the vehicle.

If you are travelling at too great a speed and try to slow down by applying the brakes, this may cause the vehicle to skid, roll over, or jackknife.

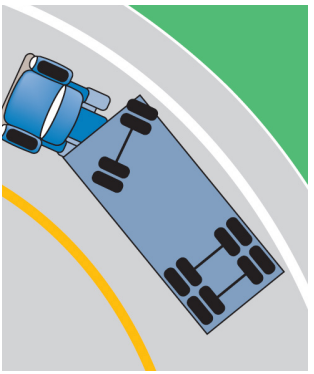
Instead, slow a bit before the curve, and then gently apply power to the wheels after entering the curve. When you apply power to the wheels, you introduce a force in a different direction from the centrifugal force (this force acts on your wheels by trying to keep it going in a straight line when negotiating a curve). The result is greater control.

Right curves



For a bus or a 3 axle vehicle, keep the front of the vehicle close to the right side of the lane and closely watch the right mirror for the position of the rear of your vehicle.

Left curves



For a bus or 3 axle vehicle, keep the front of the vehicle to the right side of the lane, watching the left mirror.

Manage your space

Hugging the outside of a curve increases the risk of hitting a soft shoulder. Hugging the inside increases the risk of putting your mirrors into the path of oncoming vehicles. Manage the space you have and pay attention to tail swing and off-tracking.

Special information for handling curves with Class 1 vehicles

When handling a right curve of a Class 1 vehicle, keep the front of the vehicle closer to the centre of the road. This will ensure the trailer wheels do not roll over the curb or drop off the pavement on the right.

When handling a left curve of a Class 1 vehicle, keep the front of the vehicle closer to the outside of the curve (i.e., right side of road). This way the trailer wheels do not cut into the other lane of traffic on the left. Watch the left mirror.

Parking

Always select a safe place to park the vehicle.

Set the parking brake. The parking brake must be set when the vehicle is in position for some period of time, or whenever the driver is not at the controls.

Put the transmission in the lowest forward or reverse gear (if applicable).

If the vehicle has a two-speed axle, put the axle in low range.

Wheel chocks are recommended to be used in addition to the parking brake to ensure the vehicle remains in position when the driver is not in control. Properly block the wheels using wheel chocks. Wheel chocks are wedges of sturdy material placed closely against a vehicle's wheels to prevent accidental movement. The bottom surface is sometimes coated in rubber to enhance grip with the ground.

When using wheel chocks, the following procedure should be followed:

- Always ensure the chock is centred and squared with the tire.

- Position the chock snuggly against the tire tread.
- Always use wheel chocks in pairs.
- Wheel chocks must be positioned downhill and below the vehicle's centre of gravity.
- On a downhill grade, position the chocks in front of the front wheels.
- On an uphill grade, position the chocks behind the rear wheels.
- On a level grade, position the chocks on the front and back of a single wheel.

The following must be considered when using wheel chocks:

- Tire size – Smaller tires require smaller chocks, while larger tires require larger chocks. The minimum size for square blocks should be 15 centimetres by 15 centimetres.
- Gross vehicle weight – Heavier vehicles require larger chocks than lighter vehicles.
- Level or grade of ground surface – Chocks need to be positioned in different ways depending on whether the ground is level. The positioning must be correct based on the surface grade.
- Radial tires or bias-ply tires – Radial tires by design deflect more than bias-ply tires. While this flexibility allows the vehicle to move more smoothly, it also allows the tire to wrap around the wheel chock, which reduces the chocks' effectiveness. To address this, vehicles with radial tires should be chocked with wheel chocks that are larger.
- Tire pressure variance – It is important to monitor tire pressure, especially in harsh environments. Improperly inflated tires can lead to chocking failures.
- Ground condition – Whether the ground is firm, soft, wet, dry, icy, or frozen is a key determination in the type of chock to use. For frozen or icy terrain, choose a chock with a cleated bottom. For severely wet or muddy terrain, multiple chocks may be necessary to ensure safe chocking.

***Note**: Do not expect the transmission to do the work of securing the vehicle. Always use the vehicle's parking brake system and wheel blocks.*

Parking on a hill

The law requires that the wheels of a parked vehicle be no more than 50 centimetres from the curb. When parked, a vehicle with a manual transmission must be left in low gear or reverse, and a vehicle with an automatic transmission must be placed in park.

Have the park brake engaged.

The following information applies to vehicles parked on the right-hand side of the road. For vehicles parked on the left-hand side of the road (one-way), turn the front wheels in the opposite direction.

- When parking downhill, with or without a curb, the front wheels should always be turned to the right.
- When parking uphill, with a curb, the front wheels should always be turned to the left.

- When parking uphill, without a curb, single unit vehicles should always have the front wheels turned to the right.

***Note**: If there is a curb, allow the vehicle to roll to the point where the front wheels are making contact with the curb before setting the park brake. This helps to prevent the vehicle from jumping the curb if the vehicle starts to move.*

Moving after parking

After the vehicle has been parked, and you are preparing to resume driving:

- Properly release the emergency brake (if applicable), by making a full application of the service brake, before moving the vehicle.
- To release the parking brake, first cover the service brake, release park brake, give full application to the service brake, and then put the transmission into gear.

Special information for parking a Class 1 vehicle

For a tractor-trailer, in addition to the above information, do the following:

- When parking the vehicle, set the parking brake in the tractor. Do not use the trailer hand valve to hold a parked unit.
- When parking downhill, with or without a curb, the front wheels should always be turned to the right.
- When parking uphill, with a curb, the front wheels should always be turned to the left.
- When parking uphill, without a curb, the front wheels of the tractor-trailer unit (with one articulation point) should always be turned to the left instead of the right.

Special information for parking a Class 2 or Class 4 vehicle

For a bus, in addition to the above information, observe the following:

- If the engine of the bus is to remain running while the vehicle is parked:
  - the transmission should be placed in neutral (for manual transmission),
  - the parking brake must be set, and
  - fast idle is engaged.

Reversing

Reversing a commercial vehicle is a hazardous movement and should only be done when absolutely necessary. If possible, have a spotter when backing up. When reversing cannot be avoided, great caution should be used, as the driver is entirely responsible for the safe backing of the vehicle.

When reversing a vehicle, a driver needs to be observant, watch their surroundings, and ensure that it is safe for reversing to be completed. Drivers should ask themselves three questions before reversing: Is it safe? Is it legal? Is it necessary?

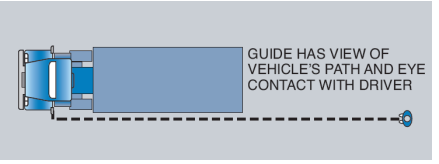
***Note**: The Use of Highway and Rules of the Road Regulation (AR 304/2002) states:*

> *32. A person driving a vehicle shall not back up the vehicle unless the movement can be made in safety and the movement will not interfere with other traffic on the highway.*
>
> *33. In an urban area a person driving a vehicle shall not back up the vehicle so that the vehicle or any portion of the vehicle enters into or is in motion*

within an intersection or crosswalk.

General information

- Avoid unnecessary reversing by planning ahead.
- A person driving a vehicle shall not back up the vehicle unless the movement can be made in safety, and the movement will not interfere with other traffic on the road.
- In an urban area, it is illegal to back up a vehicle so that the vehicle or any portion of the vehicle enters into or is in motion within an intersection or crosswalk.
- If possible, have a responsible adult act as a guide and establish hand signals between the driver and the guide. Agree on the hand signals to use.



- Have the guide stand at an appropriate location. The guide must be able to see the path the vehicle is taking. The driver must be able to see the guide. Stop immediately if you cannot see the guide or you lose sight of the guide.
- Remember that even with a guide, the driver is still responsible for all movements of the vehicle.
- Always check the area where you are reversing before beginning the move. Get out of the vehicle, walk behind it, and visually check the area. Look for obstructions and clearances.
- Sound the horn as a safety precaution before reversing. Repeat at least once for every vehicle-length reversed.
- Always reverse the vehicle slowly and use both the rear view mirrors. Never forget that there is always a blind spot directly behind the vehicle that is not visible in the mirrors.
- If the reversing distance exceeds two vehicle-lengths, stop, get out, and visually recheck the areas behind, above, below, and around the entire unit.
- Keep your foot off the throttle. You will rarely need to use it to start your unit reversing. Always select the lowest reverse gear available. Move very slowly and keep your right foot covering the brake pedal in case you need to stop quickly.

Here are some examples of hand signals.

Move right

Move left

Straight line reversing

Straight line is the easiest and safest form of reversing. Reverse straight whenever possible. Normally you will have a clear view in both mirrors of the space that you are reversing into.

- Prior to reversing, walk around the vehicle in a counter-clockwise

direction and check for obstacles and clearance.

- After re-boarding, check mirrors before putting the vehicle in reverse.
- Turn on hazard lights, sound horn, and recheck mirrors (focus on the left side flat mirror) before allowing the vehicle to move from a stationary position.
- Pull the vehicle ahead and align it with the desired direction.
- Keep front and rear wheels straight and centred.
- Once you are ready to reverse, back slowly at engine idle speed, cover brakes, and use mirrors frequently.
- Listen intently for any indication of conflict or impending collisions (e.g., horn, shouts, someone banging on the side of the vehicle, etc.)
- Stop when the desired location is reached.

Offset reversing

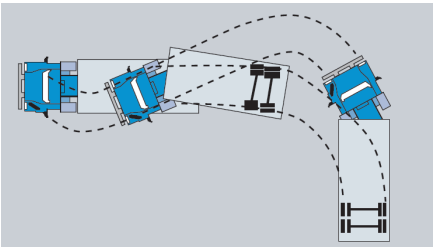
Offset reversing is a common manoeuvre done to both the left and right side. The driver is required to align the vehicle with the target backing space while driving forward. After exiting the vehicle and performing the visual checks, the driver will slowly reverse into the adjacent space.

Special information for reversing a Class 1 or Class 3 vehicle

In addition to the above information, observe the following when reversing a Class 1 or Class 3 vehicle:

- When reversing a semi-trailer, turn the steering wheel in the opposite direction to where you want the trailer to go.
- Another method is to place your hand on the bottom of the steering wheel and move your hand in the same direction that you want the trailer to go.
- The tractor must follow an S-shape in order to bring the trailer around smoothly.

90 degree reversing, clear side (left side) (tractor-trailer)

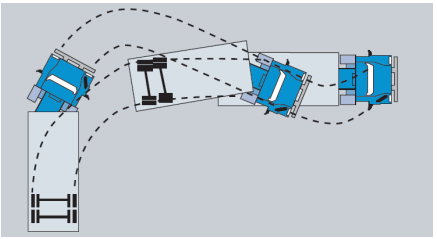


Reversing to the left provides a clear view in the left mirror of the space you are reversing into.

Start reversing and turn the steering wheel to the right to move the trailer to the left. Once the trailer is curving towards the space, turn the steering wheel to the left and let the tractor follow the trailer into the space.

When the trailer is in line with the parking space, turn the steering wheel even more to the left to straighten the tractor in relation to the trailer. Slowly finish reversing into the loading dock or parking space.

90 degree reversing, blind side (right side) (tractor-trailer)



Reversing from the blind side uses the same steps as clear side reversing.

However, it is harder to see where you are going. Once the reversing has started, you will mostly be using the right side mirror, including the convex mirror.

You should stop often and get out of the vehicle to check your position.

This type of reversing is the most difficult and potentially most dangerous. Avoid it if you can.

Reversing when parallel parking (tractor-trailer)

To parallel park a tractor-trailer to a left spot:

- Drive the tractor-trailer forward until the front of the tractor is 1.5 times the total unit length past the front of the parking lane.
- Prior to reversing, walk around the vehicle in a counter-clockwise direction and check for obstacles, possible hazards and clearance. After re-boarding, check mirrors and put the gear in reverse. Always select the lowest reverse gear available. Release park brake, start reversing, turning the steering wheel to the right to move the trailer to the left.
- Begin to turn the steering wheel to the left direction at the appropriate time, aligning the trailer with the adjacent lane.
- Straighten the truck and trailer, and continue to reverse into the final parking position.

To parallel park a tractor-trailer to a right spot:

- Drive the tractor-trailer forward until the front of the tractor is 1.5 times the total unit length past the front of the parking lane.
- Prior to reversing, walk around the vehicle in a counter-clockwise direction and check for obstacles, possible hazards and clearance. After re-boarding, check mirrors and put the gear in reverse. Always select the lowest reverse gear available. Release park brake, start reversing, turning the steering wheel to the left to move the trailer to the right.
- Begin to turn the steering wheel to the right direction at the appropriate time, aligning the trailer with the adjacent lane.
- Straighten the truck and trailer, and continue to reverse into the final parking position.

Special information for reversing a bus (Class 2 or Class 4)

In addition to the above information, observe the following when reversing a bus (Class 2 or Class 4).

Restrictions on reversing a bus

Remember that it is illegal to reverse a school bus on school grounds, or at a location next to school grounds, unless there is a responsible person located outside at the rear of the bus giving direction.

Making a country turnaround

Some bus routes may require a driver to perform a turnaround. The only time a turnaround should ever be done on a two-lane highway is if it cannot be done on private property.

Turnarounds are done by backing into a road on the right of the main roadway. Never back onto or across a highway.

Passenger-side turnaround

When a passenger-side turnaround must be done, the following procedure is recommended:

- Start slowing down well in advance of the turnaround.
- Check mirrors, shoulder check, signal right and pull the bus approximately one bus-length ahead of the road you will be backing into and 1 to 1.5 metres from the side of the road.
- Stop the bus in the proper
- position on the main roadway. Check traffic in all directions to ensure that there is enough time and space in the traffic to allow the turnaround. Wait for traffic to pass around you.
- Sound the horn, turn on hazard lights and shift into reverse. Slowly begin reversing until you see your right rear wheels line up with the side road entry point.
- Begin turning the steering wheel to the right as the rear of the bus slowly enters the side road
- Continue safely reversing into the side road using your mirrors and shoulder checking both right and left. Gradually straighten out the bus as you complete the turn and come as to stop. Reverse until the bus is fully on the road being backed into
- Deactivate the hazard lights and ensure the bus is clear. Check for:
  - sidewalks or driveways
  - road signs
  - correct alignment.
- Signal left and re-enter the main roadway when it is clear and safe to do so.

Driver-side (left-side) turnaround

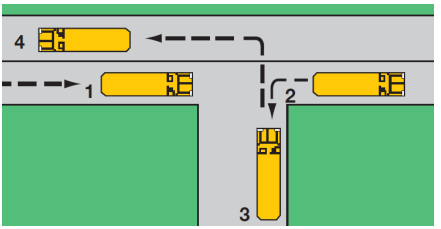
A left-side turnaround is particularly prone to poor sightlines, making visibility of oncoming traffic very difficult. While this type of turnaround is not illegal, it should be done only when absolutely necessary and where there is no safe alternative. Keep in mind that reversing a bus is potentially dangerous and great caution must be exercised.

When a driver-side turnaround must be done, the following procedure is recommended:

- Signal left. This will indicate your intention to turn into the next road up ahead. Do this at approximately 100 metres.
- Scan your mirrors often and shoulder check before turning left. Turn left when safe.
- Stop the bus and select reverse.
- Sound horn once for every bus-length as you back, and using your mirrors and sightlines, back into the closest lane without crossing the centreline.
- Signal left and proceed when safe.
- If sightlines are obstructed or there are situations where the conditions and terrain could make backing into a road difficult (i.e., narrow road, snow bank).

If required to load or unload passengers at the turnaround point, do the following:

- Load the passengers before the turnaround (see 1 and 2 on the diagram).
- Unload the passengers after backing (see 3 and 4 on the diagram).



Reversing while parallel parking (bus)

To parallel park a bus to a left spot:

- Drive the bus forward until the front of the bus is 1.5 times the total unit length past the front of the parking lane.
- Prior to reversing, walk around the vehicle in a counter-clockwise direction and check for obstacles, possible hazards and clearance. After re-boarding, check mirrors and put the gear in reverse. Always select the lowest reverse gear available.
- Release park brake, start reversing, turning the steering wheel to the left to move the bus to the left.
- Begin to turn the steering wheel to the right direction at the appropriate time, aligning the bus with the adjacent lane.
- Straighten the bus and continue to reverse into the final parking position.

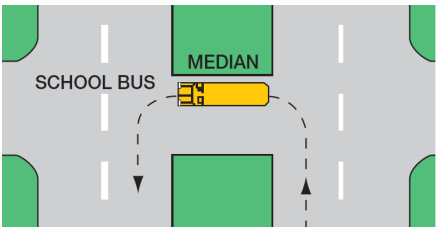
To parallel park a bus to a right spot:

- Drive the bus forward until the front of the bus is 1.5 times the total unit length past the front of the parking lane.
- Prior to reversing, walk around the vehicle in a counter-clockwise direction and check for obstacles, possible hazards and clearance. After re-boarding, check mirrors and put the gear in reverse. Always select the lowest reverse gear available.
- Release park brake, start reversing, turning the steering wheel to the right to move the bus to the right.
- Begin to turn the steering wheel to the left direction at the appropriate time, aligning the bus with the adjacent lane.
- Continue backing with the wheels turned right until the bus is parallel with the spot.
- Straighten the steering wheel and straighten out the bus within the spot.
- Straighten the bus, and continue to reverse into the final parking position.

U-turns

There are rules regarding U-turns. These cannot be made:

- If the movement cannot be made in safety and without interfering with other traffic.
- Between intersections.
- On a curve or on the approach to or near the crest of a grade or hill, unless the vehicle can be seen by a person driving another vehicle that is approaching within 150 metres (approximately 492 feet) from either direction.
- Where a sign prohibits it.
- An intersection controlled by a traffic control signal, unless specifically permitted.
- In urban areas at intersections, including alley intersections and private driveways.



***Note**: If you encounter an unexpected situation where the width, height, or weight of your vehicle is greater than permitted, follow the procedure for "Straight line reversing" to back the vehicle away from the structure or road way.*

Special U-turn information for buses (Class 2 and Class 4)

In addition to the above rules regarding U-turns, a school bus must observe the following restrictions.

A school bus cannot make a U-turn unless

- the road is a four-lane divided highway,
- the length of the bus is less than the width of the median separating the flow of traffic, and
- the bus is brought to a stop on the cross-road so that no part of the bus projects over the traffic lanes on either side of the median of the divided highway.

Shifting gears, accelerating, decelerating

You use energy to accelerate and gain momentum. You waste energy when you brake to slow down or stop. Ideally, you should aim to minimize speed changes by being in harmony with the traffic tempo and, in urban areas, in sync with traffic lights.

Using the following tips can help you do this:

- Look ahead twelve seconds down the road at the traffic situation.
- Maintain a minimum four-second following distance between vehicles, under ideal road conditions. This gives you the necessary space to slow down, accelerate, or change lanes safely and smoothly.

By learning and practicing the correct procedures for shifting, accelerating, and decelerating, countless dollars can be saved on the wear and tear of an engine and clutch. It will also provide a smoother ride.

Changing gears when accelerating

When driving a vehicle with a manual transmission, it is helpful for you to familiarize yourself with the gear pattern by checking the chart on the gear shift lever or the dash. Check to determine the recommended starting gear under normal circumstances for the vehicle that you are driving.

To change gears, do the following:

- Depress the clutch pedal and turn the ignition on.
- Shift into the appropriate gear.
- Depress the foot brake.
- Release the park brake.
- Release the clutch to the friction point.
- Remove foot from the brake pedal, place it on the accelerator pedal, and accelerate gradually.
- Remove your left foot from the clutch slowly and completely place it on the floor while continuing to accelerate. Do not ride the clutch!
- Accelerate the vehicle to the proper engine speed before attempting to shift into the next higher gear. This will prevent the engine from lugging. With practice, you will learn to feel and hear the proper engine speed for shifting.
- When appropriate to shift gears, first depress the clutch pedal and release accelerator simultaneously.
- Shift into the next gear.
- Smoothly release the clutch and continue to accelerate appropriate to conditions.

Changing gears when decelerating

When downshifting a manual transmission, the procedures are very similar.

- Depress the clutch and release the accelerator.
- Shift to the next lower gear.
- Release the clutch smoothly and use the accelerator to provide engine power appropriate to the terrain you are travelling on.
- Repeat these steps to continue downshifting as the proper engine speeds are reached.
- To bring the vehicle to a complete stop, apply the brake, gradually increasing pressure, and depress the clutch after reducing speed to between 8-16 km/h.
- If you are parking the vehicle to leave it, set the parking brake, follow the shutdown procedures, select the appropriate gear, and secure the vehicle.

Double-clutching

Double-clutching is a procedure where you depress the clutch pedal, release it, and depress it again while shifting gears.

On non-synchromesh transmissions, double-clutching makes shifting gears smoother because it co-ordinates the engine speed and the transmission speed, aligning the gears for easier shifting. During the actual shift (when the vehicle is out of gear), re-clutching and revving the engine will, in most cases, prevent excessive gear grinding.

Double-clutching lets you speed up or slow down the input shaft while it is in neutral and not engaged to any gear.

When you move the shift lever into neutral and let the clutch out, the engine flywheel can turn the input shaft without engaging any gear. When the input shaft reaches the correct rpm, quickly depress the clutch, move into the next gear and release the clutch.

Upshifting by double-clutching

- Depress clutch pedal and release accelerator simultaneously.
- Shift gear lever to neutral position.
- Release clutch pedal momentarily.
- Depress clutch pedal and shift to next higher gear.
- Release clutch pedal and accelerate engine at the same time

Downshifting by double-clutching

- Depress the clutch pedal.
- Move the gearshift lever into neutral.
- Release the clutch pedal.
- Accelerate the engine speed until engine rpm and road speed “match”.
- Depress the clutch pedal and quickly move the gearshift lever to the next gear position. (Do not engage the clutch brake.)
- Release the clutch pedal and press the accelerator at the same time.

***Note**: It is not proper to depress the clutch at too high a speed and then keep it depressed while braking to a stop. This is called “coasting to a stop”. Always use the appropriate gears when downshifting to a stop.*

Railway crossings

Crossing railroad tracks represents one of the greatest hazards in transportation with respect to the potential for mass casualties and fatalities. Crossing railway tracks can be especially hazardous for drivers of commercial vehicles for several reasons:

- Longer vehicles need to travel further and will need more time to clear a crossing.
- Heavier vehicles take more time and need more room to stop before a crossing.
- Larger vehicles are more likely to derail a train if there is a collision.

Where a train is approaching a railway crossing as indicated by devices, people, seeing it, or hearing it, all drivers must:

- Stop the vehicle no closer than five metres back (about 16 feet) from the nearest rail and not proceed until the train has passed or comes to a stop, and the vehicle can be driven safety across the railway crossing.
- If there is a stop sign, stop the vehicle no closer than five metres and no further than 15 metres (about 49 feet) from the nearest rail.
- When safe, drive the vehicle across the railway tracks with a vehicle in a gear that will not need to be changed while crossing the tracks. Shifting gears is prohibited while crossing the railway tracks.
- Not park a vehicle within 50 metres (about 164 feet) of the nearest rail of a railway crossing controlled by a traffic control device, when outside of an urban area.
- If a train is observed within 500 metres of the crossing, regardless of whether or not a signal is activated, the vehicle must be brought to a stop.

Unless there is a municipal bylaw to change the requirements, or peace officer direction, the law requires the following at uncontrolled railway crossings for a vehicle that is a school bus, is carrying explosive substances as cargo, or is used for carrying flammable liquids and gas:

- Always stop the vehicle no closer than five metres (about 16 feet) or further than 15 metres (about 49 feet) from the nearest rail.
- While stopped, listen and look in both directions along the railway for an approaching train or signals of an approaching train.

Before resuming travel, make sure there is enough room on the other side of the track for your entire vehicle to clear. Be aware that a train will be a metre wider than the rails on both sides.

- If there is no indication of a train, close window and front door (if a bus), shift into the appropriate gear, and release parking brake.
- Check the crossing signals one more time before proceeding.
- If the crossing lights begin to flash after starting, keep going. It is safer to continue than to back up.

***Note**: For vehicles with a manual transmission, never attempt to shift gears while crossing railroad tracks. This will minimize the chance of stalling or not being able to get the transmission into the next gear while on the tracks. It is also against the law to change gears while crossing railroad tracks.*

Multi-track crossings

When crossing multi-track crossings, make certain there are no trains approaching before crossing any of the tracks. After a train passes on a multi-track crossing, wait until all tracks become visible in both directions before proceeding. A second train may be approaching from the opposite direction.

Remember that if there is more than one track, there may be more than one train. Do not assume the train you see is the only one present.

Obstructed railway crossing

If bright sunlight, fog, snow, smoke, or other obstructions make it difficult for you to see, then adjust your speed so that you can come to a safe stop if there is a train approaching.

When you are sure that it is safe and that no train is approaching, return to the vehicle and proceed across the tracks as mentioned above. Be alert for a fast-moving train that may have approached during the time it took you to return to the vehicle. Start the vehicle and begin moving forward.

Other information for railway crossings

- Because of its size, it is easy to misjudge the speed and distance of an approaching train.
- Never try to beat a train to the crossing. Many vehicles have been hit by a train, or have run into the side of a train, when trying to get across the tracks ahead of the visibly approaching train.
- When a train clears the crossing, the driver should not immediately proceed across the tracks without first checking for other trains. Drivers must be patient and wait for a train to proceed a sufficient distance to allow for good visibility in both directions.
- A driver should never attempt to cross tracks while the flashing signals are still operating. If the signals are on and there is no train in sight, it may be approaching at high speed but is just not yet visible, or possibly there could be a malfunction in the system. (The cross-buck has the phone number to call for repair and a number that indicates the location of the track.)
- The signals may be malfunctioning in the off position and a train may be approaching the crossing. Always be prepared to stop when approaching a railway crossing, even when signals are present but not activated.
- Do not attempt to cross the tracks unless you can see far enough in both directions to be sure that no train is approaching. Be especially careful at crossings without gates, flashing lights, or bells.
- Familiarity breeds complacency. Always remember the saying, “Anytime is Train Time!” When approaching a familiar crossing that normally never has a train on it, the driver should still be alert for a train, since their schedules can change from day to day.
- Drivers should reduce speed and be especially observant if weather conditions or sight observations limit visibility of the rail.

- Some tracks may have curves and be hidden behind trees or hills, which would make a train approaching a high speed difficult to see and difficult to react to ahead of time.
- Always use extreme caution. Take your time. Be 100 per cent sure it is safe before crossing any railway track whether signalized or not.
- Be cautious when approaching an uncontrolled rural railway crossing at night. A train may be crossing in front of you. The presence of a train may appear like a black, dark object against the background of a dark road.
- Pay extra attention when you cross railway tracks in rural areas because of the following:
  - Approach grades may be steeper
  - Snow banks may be higher
  - Brush and trees may be more common
  - There tend to be fewer automated warning systems
  - The grade crossing may be rough or uneven.
- If your vehicle stalls or gets stuck on a crossing, get out of the vehicle immediately. If a train is coming, move away from the track toward the oncoming train. This will reduce the chances of being struck by flying debris if the train hits the vehicle. Contact the railway company if its emergency number is posted or call 911.

***Note**: If your vehicle is carrying explosives or flammable goods, you must stop before every uncontrolled railway crossing.*

Special railway crossing information for buses (Class 2 or 4)

In addition to the above information about railway crossings, a school bus (Class 2 or Class 4) should do the following.

At an uncontrolled railway crossing:

- Reduce noise by turning off any fans, audio, and asking the passengers to be quiet to effectively listen for trains.
- Activate hazard lights to warn other drivers the school bus is following different rules at the crossing that they may not expect. The alternately flashing amber or red lights must not be used for railway crossings.
- Drive in the most right-hand lane, so that when you open the front door there is reduced risk of hitting another vehicle.
- Stop the bus and put the vehicle into neutral. Apply the park brake and keep firm pressure on the service brake.
- Open the front door of the bus and, if practical to do so with one hand, also open the window of the bus that is located immediately to the left of the driver.
- When you are sure that it is safe to proceed, remember to close the door and turn off hazard lights.

Reserved lanes

Reserved lane signs are placed over or beside lanes to indicate that these lanes are for use by specific vehicles only. The symbol on the sign shows the type of vehicles that are permitted to use the lane. The symbols that may be seen are the silhouettes of a bus, taxi, and bicycle. Reserved lanes that are designated for part-time operation will show the hours of the day and the days of the week when that lane is reserved. If a lane is designated for full-time use, the sign will not show the times and days. There will be a final sign at the end of the reserved lane to show that the reserved lane ends. The white diamond on a black background indicates that the vehicles in the reserved lane travel in the same direction as the traffic.

Daily log

A driver must account for every day by completing a daily log for each work day.

The driver's employer must ensure the driver follows the regulations and must maintain the daily logs, in an orderly manner, for each driver for six months.

A daily log must be completed as follows:

- Required information must be entered accurately and legibly.
- The daily log must be maintained current to the last change of duty status, such as off-duty time and driving time.
- Copies of documents received during the trip must be kept, such as hotel receipts and fuel receipts.
- The daily log, and all supporting documents, must be delivered to the employer within 20 days.
- A copy of each daily log and supporting documents must be kept for at least six months from the date that the information is recorded in the daily log (in accordance with section 17 of the Drivers' Hours of Service Regulation (AR 317/2002).

Completing the daily log

At the start of the day, record the following:

- The odometer reading at the commencement of driving.
- The vehicle's unit or licence plate number.
- The name of the carrier for whom the driver worked during the work day.
- The name of the driver.
- The name of any co-driver.
- The time of commencement of the work shift and the location at which the driver commenced the work shift.
- The address of the principal place of business and of the home terminal of each carrier for whom the driver is employed or otherwise engaged during the work day.

During the day:

- Complete entries on a graph grid.
- At each change in duty status:
  - Draw a continuous line between the appropriate time markers to record the period of time off duty, driving time, and time on duty other than driving time.
  - Under “Remarks”, record: (a) the name of the city, town, village, or highway location, and the name of the province or state where each change of duty occurs; and (b) the name of each city, town, village, or highway location, and the name of each province or state where fuel was obtained and the number of litres or gallons of fuel.

At the end of the day, record the following:

- The total number of kilometres or miles driven by the driver during the work day.
- In the case where a vehicle is being operated by co-drivers, the total number of hours that the vehicle has travelled during a work day.
- Sign the log.

Electronic logging device or Automatic On-Board Recording Device

Under the Drivers’ Hours of Service Regulation (AR 317/2002), a commercial vehicle may be equipped with an electronic logging device.

If the vehicle is equipped with such as a device:

- Information contained in the device must be the same information that a driver would record on a daily log in paper format.
- The device must automatically record when it is disconnected and keep a date and time record of those occurrences.
- The device must automatically record when the vehicle is in motion.
- The driver must keep a printed record of the information collected by the device.
- The driver must sign each hard copy.
- If the device is malfunctioning or not operating properly, the driver must maintain a regular daily log.

Other points to know for all commercial drivers

- A person shall not drive a vehicle at any rate of speed that is unreasonable after considering all the circumstances, including weather, traffic volume, condition of the road, and condition of the vehicle.
- A person shall not drive a vehicle so as to follow another vehicle more closely than is reasonable and prudent considering the speed of the vehicles, amount and nature of traffic, and the condition of the road.
- A driver may operate their commercial vehicle for personal use, up to 75 kilometres each day, when:
  - There are no passengers
  - No trailer is being towed
  - No work of any sort is being done for the carrier
  - The starting and ending odometer readings are recorded in the driver’s daily log.

6

Additional Operations for Specific Vehicle Classes

Coupling and uncoupling (Class 1 vehicles)

Coupling and uncoupling a truck-tractor and semi-trailer

Coupling

The basic steps for coupling a truck-tractor to a semi-trailer are as follows:

- Chock the semi-trailer wheel. If you only have one chock, place it to the rear of the semi-trailer wheel. If you have two chocks, place one to the front and one to rear of the semi-trailer wheel.
- Check that the jaws on the fifth wheel are in the unlocked (open) position.
- Check the condition of the semi-trailer apron, kingpin, and its collar, for excessive wear or cracks.
- Back the truck-tractor in line for the hook-up with the semi-trailer. Stop before contact is made between the fifth wheel and the trailer apron.
- Check that the height of the fifth wheel and the semi-trailer match.

***Note**: Some older trailers may not have spring brakes.*

- If the semi-trailer does not have spring brakes on at least one axle, connect air lines from the truck-tractor to the semi-trailer and fill the trailer air tanks.
- Set the semi-trailer brakes.
- Back the truck-tractor until a connection has been made.
- Perform a firm tug test to ensure you have a good hook-up. If noticeable slack is present, make necessary corrections.
- Visually check that the fifth wheel jaws are properly locked around the trailer kingpin.
- Raise the landing gear and hook-up the electrical line.
- Remove wheel chocks.

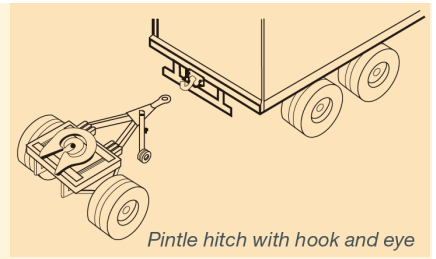
Uncoupling

- The basic steps for uncoupling a truck-tractor from a semi-trailer are as follows:
- Park the truck-tractor and semi-trailer in a straight line and set the park brakes.
- Chock semi-trailer wheel. If you only have one chock, place it to the front of the semi-trailer wheel. If you have two chocks, place one to the front and one to the rear of the semi-trailer wheel.
- Lower the landing gear.
- Disconnect the electrical and air lines and unlock the fifth wheel.
- If the semi-trailer does not have spring brakes on at least one axle, fill the trailer air tanks, set trailer brakes, disconnect electrical lines from the truck-tractor and the semi-trailer.
- Secure the electrical connection and air lines to the truck-tractor.
- Move the truck-tractor ahead slowly until the fifth wheel just clears the semi-trailer and stop.
- Check that the ground and landing gear support the semi-trailer.
- Move the truck-tractor ahead slowly until the tractor frame completely clears the semi-trailer.

Coupling and uncoupling pintle hitch attachments

The basic steps in uncoupling pintle hitch attachments are:

- Park the towing/power unit and trailer in a straight line.
- Set the parking brakes of the towing/power unit and trailer.
- Chock trailer wheels.
- Disconnect air lines, electrical line and other associated hoses (if applicable).
- Disconnect safety cables/chains from towing/power unit.
- Disconnect safety pin (if equipped).
- Release pintle hook locking (safety latch) mechanism.



Pintle hitch with hook and eye

- Lower landing leg if equipped; otherwise, block the drawbar when required.
- Move towing/power unit ahead slowly until pintle eye completely clears pintle hook.
- Stop and visually check that the pintle eye is free of the pintle hook.

The basic steps in coupling pintle hitch attachments are:

- Position the towing/power unit in line to receive the pintle eye.
- Stop the towing/power unit before contact is made with the pintle eye.
- Chock trailer wheels.
- Ensure pintle hook is open to receive pintle eye.
- Ensure pintle hook and eye has no cracks and or signs of excessive wear.
- Ensure pintle eye is the proper height to lower onto the pintle hook, adjust drawbar height if necessary.
- Position towing/power unit so the pintle eye can be lowered onto the pintle hook.
- Snap pintle hook shut and ensure safety latch is locked.
- Properly attach safety cables/chains to towing/power unit.
- Fasten safety pin (if applicable).
- Properly attach air lines, electrical line and other associated hoses (if applicable).
- Charge air system and if equipped with a “no-slack ram”, do a tug test to ensure the ram is energized.
- Perform a visual inspection to ensure all locking mechanisms are properly secured.
- Place landing leg (if applicable) in transport position and remove chocks.
- Ensure hitching devices are secure and re-check safety latch.

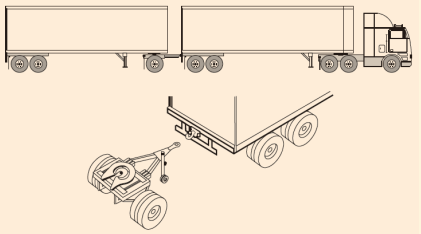
The most important task in the coupling procedure is to physically and visually check all connections. Failure to do so may be the cause of a serious incident.

Coupling mechanisms

Double trailer combination types

When adding a second trailer to the rear of a lead trailer, a converter mechanism is needed. Each converter must have its own fifth wheel attachment. There are three different types of converters.

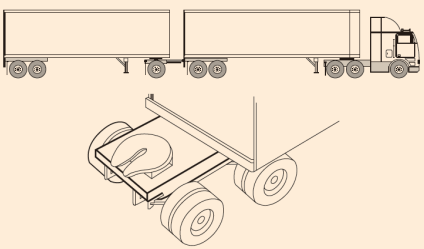
A train



A train – example of a unit connected by a type A converter dolly.

This converter has an A-shaped drawbar that joins into a single pintle hitch point on the lead trailer. Due to its shape, it is often called an A-dolly. When two trailers are joined together using the A-dolly, the whole unit is called an A train. These converters provide two points of articulation (joints that allow side-to-side or lateral movement). One of these points is at the pintle and the other is at the fifth wheel.

B train

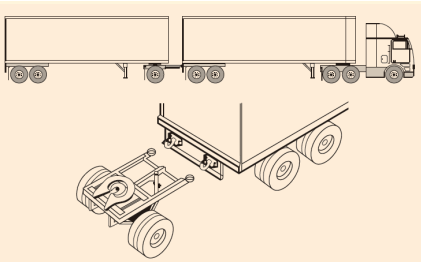


B train – example of a unit connected by a type B converter dolly.

In a B train, the converter is part of the lead trailer. The fifth wheel assembly sits on the rear axle of the lead trailer. It is either permanently fixed in position or slides out with the rear axle.

No converter dolly is required, as the second unit connects directly to the extended frame of the lead unit.

C train



C train – example of a unit connected by a type C converter dolly.

A C train is like the A train, in that it uses an independent converter. The difference between the two is that the C train has two drawbars and two pintle hitches in the double drawbar converter.

Two bars mean there is only one articulation point. The result is that the trailer moves less from side-to-side.

To improve performance even more, double drawbar converters have a self-steering axle.

When driving a C train, check that the air pressure on the self-steering axle is within the manufacturer's standards. If the air pressure falls too low, the wheels will steer too much and the unit becomes unstable. This can lead to skid steering, which can damage the converter and hitch.

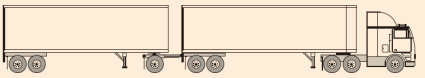
Link-up arrangement

When linking two or more trailers to a towing unit, always hook the heaviest trailer directly to the tractor. The lightest trailer should be the furthest away from the towing unit. This rule applies no matter how long each trailer is. If the trailers are not joined according to weight, the unit will be unstable. The rear trailer will sway and control of the unit could be lost.

Examples of long combination vehicles

Rocky Mountain Double

Triple



Turnpike Double

Operating long combination vehicles

When a permit is issued according to Section 62 of the *Traffic Safety Act* authorizing the movement of Long Combination Vehicles (LCVs), a list of general provisions must be followed. Some of these provisions are listed below.

***Note**: For a complete, current list of all provisions, carriers who wish to operate LCVs should contact the Central Permit Office at 1-800-662-7138 or central.permits@gov.ab.ca. For toll-free service from anywhere in Alberta, call 310-0000.*

- Companies must have and be able to provide proof that their drivers and driver trainers meet and maintain the requirements outlined in the Canadian Trucking Alliance's Longer Combination Vehicle Driver's and/or Instructor's Manual.
- The carrier is responsible for issuing an annual LCV Driver's Certificate. The Driver's Certificate is valid for 12 months after the date of issue, and must be in the possession of the driver at all times when operating an LCV. Before issuing an LCV Driver's Certificate, the carrier must ensure that the driver meets the following qualifications. The driver:
  - holds a valid Class 1 driver's licence or equivalent and has passed a recognized air brake course
  - has a minimum of 24 months or 150,000 kilometres of driving experience with articulated vehicles in the Class 1 category
  - has passed a Professional Driver Improvement Course within the past 48 months
  - has passed the Canadian Trucking Alliance's Longer Combination Vehicles Driver Training Course or equivalent
  - has in the past 12 months been instructed on all current regulations, permit conditions and issues covering the operation of LCVs
  - has a driver's abstract that is dated not more than one month prior to the issue date of the Driver's Certificate. It must show no driving-related Criminal Code convictions in the prior 36 months; no more than two moving violations in the prior 12 months; and no more than three moving violations in the prior 36 months. The date of conviction and the current date are the dates used to determine the time periods.

Speed limits for long combination vehicles

The maximum speed limit for drivers of long combination vehicles shall not be more than 100 km/h or the posted speed limit, whichever is lower.

Loading and unloading dump vehicles (Class 1 and Class 3 vehicles)

Loading

Follow your company's policy for loading a vehicle on site. Some companies prefer drivers to remain inside the vehicle while others require them to stand outside the vehicle while it is being loaded.

When leaving the vehicle, use the three-point contact procedure. This means that two hands and one foot, or two feet and one hand, remain on the vehicle at all times. Never jump from the vehicle. When outside the vehicle, wear the appropriate protective equipment.

You must not move a loaded vehicle until the following has occurred:

- The material is evenly distributed in the box.
- The load is secured so it will not blow or fall off and damage other vehicles or cause personal injury. You must comply with the *Traffic Safety Act* when securing loads. If a municipality has a law that states that the load must be tarped, you must ensure that it is done. While covering the load, watch for debris that may have been caught in the tarp.
- The vehicle's tailgate, tailboards, doors, tarpaulins, spare tire, and any other equipment that needs to be fastened is secured.
- There are no loose materials, debris, or rocks in the tailgate, sides of the box, hitches, or coupling devices. Clean or sweep off loose material with a brush or broom.
- The vehicle is loaded so the total dimensions and total weight on each axle are within the limits according to the laws in the jurisdiction where the vehicle is being operated.

Before unloading

- Move slowly if you must back into a position to unload. Before backing in an unfamiliar area, get out, look around the area, and walk the route that you will follow.
- You should back the vehicle to the driver's side (left) for better visibility. Use the mirrors continually to check your position.
- If the vehicle is equipped with a backing alarm, make sure it is working. Some regulations require a backing alarm when vehicles are around workers on foot. These alarms must be automatic and cannot have a shutoff switch as specified in Occupational Health and Safety Code.

For more information regarding this code visit this website;

www.alberta.ca/occupational-health-and-safety-code-and-explanation-guide.aspx

- Whenever possible, have someone guide the vehicle when you are unloading. Make sure that you and the guide use and understand the same hand signals. The guide should always be outside and to the rear of the vehicle so that they are able to see the path the vehicle is taking and be seen by the driver. The driver should always be able to see the guide. Stop if you cannot see the guide.

- Remember, even with a guide, you are still responsible for all movements of the vehicle.
- Check for overhead wires and obstructions.
- Do not raise the box to dump unless the vehicle is on level ground.

During unloading

- Other vehicles and people must not be within the dumping radius of the raised box.
- Before dumping into a hopper, get out and look to make sure the hopper is empty.
- To avoid a tip-over, learn to recognize hazardous areas and situations. These include soft or uneven surfaces or poorly compacted fill.
- The tailgate chain and the angle of the truck bed will regulate how fast the material flows from the box.
- Check your operator's manual for detailed instructions for unloading.
- Release the tailgate. Be aware that a load that is concentrated at the rear of a raised box with the tailgate closed can tip the vehicle over backwards.
- Do not get into the raised box if the load is stuck. Lower the box first.
- If you lose sight of your guide, stop until visual contact is regained.
- Once the unloading has been completed, lower the box and ensure that the tailgate is latched.

Mixer truck operators

Mixer trucks in the Class 3 vehicle category require the same basic procedures about pre-trip inspections noted in the previous section, except for the specific characteristics of that vehicle. Although loading and unloading the product would be different, similar safety precautions are needed, as well as the assessment of the conditions at each job site. The vehicle driver is responsible for the truck at all times.

Concrete mixers are top heavy and unstable when loaded. Due to the rotating action of the mixer drum and the unique characteristics of concrete, special care is needed when carrying low slump concrete on turns, corners, and ramps.

Other information about carrying loads (Class 1 and Class 3 vehicles)

- When carrying logs on a vehicle, the overhanging logs may swing across the other traffic lanes when you turn. Try to let traffic behind pass before you make the turn.
- When driving in urban areas (cities and towns), you must drive only on the routes specified for trucks and dangerous goods vehicles.
- If a vehicle's load reaches or extends more than 1.5 metres beyond the rear of the vehicle, the following is required:
    - During daylight hours, a red flag, not less than 30 centimetres square, must be attached to the end of the extension.

- During nighttime hours, a red light must be attached to the end of the extension.

***Note**: If your truck or vehicle is carrying goods or commodities to the United States, and this is not something you do on a regular scheduled basis, you must contact either the Department of Transportation or the Department of Highways in each state where you will be travelling before starting your trip. Each state has different laws. Your trip will be faster and smoother if you obtain all the proper permits and documents before you go.*

Passenger loading and unloading (Class 2 and Class 4 vehicles)

Unless there is a municipal bylaw to change the requirements, the law requires that school bus drivers:

- Activate the alternately flashing amber lights when they begin to slow down the school bus for the purposes of stopping to load and unload passengers only.
- Activate the alternately flashing red lights and stop arm when loading and unloading passengers only.
- Activate a strobe lamp during adverse atmospheric and visibility conditions, including fog, blizzard, and smoke, if the vehicle has a strobe light. This light may be used anytime increased visibility is desired.

Drivers of vehicles must stop when approaching a stopped school bus displaying alternately flashing red lights from either direction on an undivided highway, and from behind the bus on a divided highway.

School bus drivers should follow these general loading and unloading procedures:

- Check mirrors often as you drive. Pay particular attention when you know that a bus stop is approaching. Detect the traffic patterns for following and oncoming vehicles.
- Before stopping, ask the following questions:
  - Is traffic relatively clear?
  - Can the stop be made with little or no hazard to the bus, the passengers, or other traffic?
- Is there an oncoming vehicle that may cause a problem?
- Is there a long line of vehicles following your bus that have not had an opportunity to pass your bus?
- Does the driver following your bus appear to be impatient or anxious to pass?
- If there is traffic following or oncoming, and you have an opportunity to let it pass, do so by slowing down well before the stop and allow the traffic to clear. The safest place for other traffic is GONE.
- Do not use the shoulder or “Parking Lane” of a provincial highway as a driving lane for your bus.
- Activate your right-turn signal. This will indicate your intentions to change lane position. If there is an approach or other driveway before your intended stop, hold your signal until you pass it.

- Shoulder check and check your mirrors every time you change position in your lane.
- Look ahead and choose a location that is as far right as practical, which will still give the passengers a safe footing, and is away from any obstruction (e.g., trees, poles, etc.)
- Activate the alternately flashing yellow lights when the bus begins to slow down.
- Park the bus off the roadway. If this cannot be done, the law allows school buses to park on the roadway where there is a suitable space available on the ground for passengers being loaded or unloaded. For parking on the roadway, it is courteous to pull as far to the right as practical before stopping to load or unload passengers, at least one metre away from the students waiting to board.
- Once the bus is stopped, cancel the right-turn signal, and secure the bus.
    - Place the gear in neutral (for a manual transmission) or park (for an automatic transmission), set the parking brake, and maintain pressure on the brake pedal. This must be done every time.
    - On some transit buses, interlock brakes prevent power from being transferred to the throttle and can be applied instead of setting the gear in neutral and applying the parking brake. On some transit buses, interlock brakes apply automatically when the door is opened.
- Before loading or unloading, conduct mirror and shoulder checks. Check for vehicles approaching from the rear, both sides, and from the front. Verify that all traffic has stopped.
- Activate the alternately flashing red lights once the bus has been secured.
- Open the door of the bus and let the passengers on or off. Ensure that passengers entering and exiting the bus conduct themselves in an orderly fashion.
    - Do not close the door until passengers entering are safely on the bus or until passengers exiting have safely exited the bus.
    - Use mirrors to monitor passengers exiting from the vehicle from the rear door prior to closing the door (if applicable).
- If students must cross the highway in a rural area after getting off the bus, instruct them to go at least 10 paces in front of the bus, stop before they enter the roadway and wait for your direction before crossing the road.
    - Establish a line of sight with them. Look up and down the roadway checking for traffic before you let them cross in front of the bus.
    - Do not lose sight of the students as they cross, and be sure that you can account for all of them.
- Once all passengers have entered or exited the bus, all doors must be closed prior to moving the bus.
- Make sure all passengers are seated (except for transit buses, where standing passengers are permitted).
- Before moving, check all mirrors, including the cross over mirror, to ensure that no individuals are lingering near the bus.

- Turn off the alternately flashing lights. Closing the door on a school bus automatically cancels the flashing red lights.
- Mirror check, shoulder check and activate the left turn-signal. Release the park brake, and when it is safe, re-enter the traffic flow and proceed on your route.

***Note**: Remember that bus drivers communicate to other motorists through the use of their lights, not by using hand signals.*

Drivers should also be aware of the following:

- The bus must be stopped when loading and unloading passengers.
- There are specific laws for backing up and turning a school bus that must be followed.
- Be sure that all the students are seated while the bus is in motion.
- Always use frequent mirror checks to be sure that it is safe before activating the alternately flashing red lights or giving a signal for the students to cross the roadway. Even though other drivers are required by law to stop, they may not. If a driver of a vehicle does not stop for the alternately flashing red lights, you can write down the vehicle's licence plate number and report the incident to the local police authority

Information for Class 4 vehicles

Emergency vehicles

Legal aspects of emergency vehicle operation

- The *Traffic Safety Act* states that a siren on an emergency vehicle shall be operated only when the vehicle is being used in response to an emergency, an emergency call, or an alarm.
- When operating an emergency vehicle, the law states:
  - (1) Where, considering the circumstances, it is reasonable and safe to do so, a person driving an emergency vehicle may while the vehicle's siren is operating do one or more of the following:
  - (a) drive the vehicle in excess of the speed limit;
  - (b) proceed past a traffic control signal indicating stop or a stop sign without stopping.
  - (c) contravene any provision that is prescribed by the Act, this or other regulations or a municipal bylaw governing the use of the highways.
  - (2) An emergency vehicle, while its siren is operating, has the right-of-way over all other vehicles.
  - Use of the red flashing lights alone, does not exempt the driver from the *Traffic Safety Act*.
- The *Traffic Safety Act* authorizes emergency medical operators to disregard some traffic laws under limited circumstances. Failure to meet the requirements of these circumstances means that the driver may be subject to civil and criminal penalties in the event of a collision.

- Even during the most serious emergency, an emergency medical operator must consider the safety of others.
- When parking an emergency vehicle, the law states:
  - Where, considering the circumstances, it is reasonable and safe, an emergency vehicle may, while its flashing lights are operating, be parked contrary to any provision that is prescribed by the Act, this or other regulations or a municipal bylaw governing the parking of motor vehicles.

Defensive driving factors

Headlights

Always use headlights along with the emergency overhead lights.

Lights and sirens

Sirens are required by law when an ambulance is operating during an emergency. Using the red flashing overhead lights alone is not sufficient. Do not let the emergency sirens and lights give you a false sense of security. These warning devices are for the benefit of the public. Most drivers will clear the path if they know the ambulance is there. Do not assume that other drivers have seen your vehicle or that they will move out of the way. The responsibility for safe driving rests on you, the emergency vehicle driver.

Other factors

As an emergency medical operator, it is important to identify those situations that could result in a collision. Driving movements that can contribute to collisions are:

- reversing
- poor road position
- turning
- changing lanes
- lack of awareness of the unit size, which can lead to sideswipes on the blind right side
- driving too fast for conditions.

If you approach an intersection with cross traffic, slow down and, if practical, stop briefly. Make eye contact with the other drivers at the intersection and proceed when you have been seen by them. Be even more careful at pedestrian crossings. Many pedestrians, including school children, may not be aware that an ambulance is coming toward them.

If you are driving on a four-lane highway with the lights and siren activated, stay in the left lane if possible.

When reaching the scene of a collision, park the vehicle so it protects the injured person(s) and the attendant. Keep the flashing lights activated and turn on the headlights so that the vehicle is clearly visible to other drivers.

Operating a taxi, limousine, or ride for hire vehicle

As the driver of a taxi, limousine, or ride for hire vehicle your first and most important concern is safety. You will encounter numerous challenges in the driving task, and will need to be aware of other road users and their driving. To handle this effectively, be patient and drive proactively. To help you focus on your driving, ensure that nothing in the vehicle, including the passengers, prevents you from doing your job. It is your responsibility to provide safe transportation to all your customers. However, you may refuse to transport customers if:

- your vehicle is already carrying the maximum allowed number of passengers
- a passenger is offensive or dangerous to you or others.

Good professional habits go hand in hand with good passenger relations. To passengers, reliable and expert service means getting them to where they are going safely and comfortably, by the most direct route.

Taxi or limousine permits

Municipalities have different requirements for issuing a taxi permit. Check with your municipality about the requirements needed to obtain a taxi or limousine permit.

***Note**: Always check municipal laws regarding taxi operation.*

A Class 4 licence is required for a driver who is operating a vehicle under the condition for hire, as defined by the Operator Licensing and Vehicle Control Regulation (AR 320/2002).

"For hire" with respect to a vehicle, means that the vehicle owner or operator, or the operator's employer, is being paid for the service that the vehicle is being used to provide. However, for the purposes of sections 23 (Class 3 licence) and 25 (Class 5 licence), a motor vehicle is not for hire when the operator drives a private passenger vehicle for the transportation of passengers on an incidental or occasional basis and receives compensation in respect of the transportation of those passengers only in one or more of the following forms:

1. as payment for the kilometres travelled at a rate not exceeding the limit of tax-exempt allowance paid by employers to employees as prescribed in section 7306 of the Income Tax Regulations of Canada (CRC chapter 945);
2. as straight reimbursement for out-of-pocket expenses directly related to the transportation, including, without limitation, gas, parking, gate passes, and tolls;
3. in a case where the operator is party to an agreement to provide transportation to only the operator's family members, members of the operator's household or persons for whom the operator is a legal guardian, as compensation only to provide transportation to those persons.

7

Transporting People (Class 2 and 4 vehicles)

Passenger management

As a driver, it is important to self-assess your fitness to drive before a trip. Particularly how your medical, emotional and psychological wellbeing affects your functional ability to drive.

Emotional, mental, and psychological factors affect a driver's behaviour towards their passenger(s) and the safe operation of a motor vehicle.

Positive behaviours such as professionalism, friendliness, helpfulness, and patience will help your passengers have a good experience and will encourage safe operation of your vehicle. Behaviours such as irritation, anger, and rage towards other road users and passengers will result in complaints, threaten your job security, and contribute to unsafe operation of the vehicle.

Professionalism

Conducting yourself in a professional manner helps develop an atmosphere of friendly cooperation between you as a driver, others you encounter in your role, your passengers or clients, and your employer. Professionalism can be demonstrated in several ways:

- Keep your vehicle clean and in good condition.
- Maintain a neat appearance, with attention to personal grooming.
- Have respect for clients and passengers. This encourages them to have mutual respect for you as a driver.
- Keep a positive attitude. Your attitude influences your driving skills. A friendly smile and good sense of humour can both be very helpful during your work day.

Effective communication

An important part of positive behaviour is effective communication.

The following are indicators of ineffective communication:

- When you are not listening
- When you are argumentative
- Your body language shows that you are indifferent to the issue
- You are not making eye contact.

Instead, practise effective communication. This means using words, voice tone, and demeanor that do not display negative feelings with your passengers before, during or after driving.

- Tailor your tone to your passenger(s). This can range from friendly to humorous or conversational.
- Show a pleasant and professional demeanour.
- Speak clearly and audibly when communicating with a passenger(s).
- Show empathy to all passengers.
- Demonstrate understanding and patience when working with all passengers, in particular this skill will be needed as some passengers may require more verbal or physical support than others.

When faced with situations, actions, and reactions that could trigger negative emotions, you can practise the following:

- Avoid focusing on emotions when trying to resolve issues.
- Understand that passengers and other road users may make mistakes.
- Take deep breathes and relax your body.

- Use clear, positive and/or neutral words to avoid escalating a situation.
- Practise using de-escalating responses such as: “I understand your concern”; “Perhaps calling (give them the appropriate name) will offer a solution”.

Driving under the influence of any alcohol or drugs can affect drivers’ ability to function at their best. For example, some prescription medications, recreational substances, and alcoholic beverages may cause mood swings, heightened sensitivity or irritation. Note that this may aggravate your passengers, and could give rise to issues.

Note that commercial drivers are subject to immediate roadside sanction zero (zero tolerance for alcohol) under the *Traffic Safety Act* if they are found to have any alcohol or drugs in their body while operating a vehicle.

The *Traffic Safety Act* also prohibits impaired driving. A driver found guilty becomes disqualified from driving a motor vehicle for a period of one year from the day of the finding of guilt, as a first time offender. If found guilty of impaired driving under the Criminal Code, the driver could receive a combination of fine, imprisonment and driving ban.

Every driver should conduct a self-assessment to determine their fitness to drive before each trip. An unfit driver poses a safety risk to other road users and passengers. Do not drive when you are unfit to do so.

Dealing with difficult people

As a driver you may encounter passengers or road users that are difficult, rude, argumentative, and aggressive. This could make passenger management challenging or create an unsafe situation.

Be proactive by setting a good example

Setting a good example for your passengers can encourage them to behave in a similar way. This can help avoid passenger difficulties and start things on a positive note.

- Be on time. If you are never on time at a pick-up point, you cannot expect your passengers to be on time.
- Speak in a normal tone of voice. Not raising your voice will encourage your passengers to do the same.
- Be respectful of your passengers’ needs and concerns.
- Allow your passengers to make mistakes and, with your guidance, to correct them as soon as possible.
- Leave your personal problems at home, focusing on your job. Try to be the same each day so your passengers know what to expect.
- Act professionally towards passengers and your employer when conflicts arise.
- Avoid focusing on emotions when resolving a conflict. Concentrate instead on how an incident can be resolved in a safe and professional manner. Safety should always be the first priority.

Road rage

When encountering road rage from other drivers:

- Make your safety and your passenger’s safety a priority.
- Lock your doors.
- Avoid actions that could put you and your passenger at risk.
- Do not retaliate.

- Do not transfer the aggression to your passenger.
- Slow down or increase your speed safely (within approved speed limit) to move away from the aggressive driver.
- If you are in radio contact with your employer, inform them of the challenges you are experiencing.

A driver should take steps to avoid decisions or actions that can be considered as road rage. Suggestions include:

- Do not drive while agitated.
- Be patient with other road drivers.
- Understand there may be delays en route, allow extra transit time if possible.
- Avoid consuming substances that could cause unstable mood.
- Take responsibility for your actions.

Difficult passengers

Dealing with difficult passengers is not unusual and drivers should be prepared to handle such situations if they arise.

Your first step should be to de-escalate the issue through effective communication using positive or neutral language. Communicate effectively with the passenger to correct or confirm assumptions that could give rise to misunderstandings or conflicts. Some general suggestions to de-escalate a situation include:

- Use a normal tone of voice when speaking with the passenger.
- Act professionally when addressing the passenger.
- Do not ignore the passenger's questions or points. Acknowledge their point of view and respond politely.
- You may use words such as: "I understand your point, however…", "Those are valid concerns and I can support by…"
- Address any concerns before starting the trip.

Some passengers may continue to be difficult rude or irate, despite best efforts by the driver. In such situations, following are some general guidelines to follow:

- Respectfully inform the passenger to make a choice to behave or face the clearly explained consequences.
- Avoid using aggravating phrases and words such as "Listen to me".
- Do not yell at or insult the passenger.
- Strive to maintain the dignity of the passenger and yourself.

If you feel uncomfortable transporting a passenger as a result of their words or actions, follow your employer's policies or guidelines when refusing to transport the passenger.

Passenger safety

Your objective as a driver is to transport passengers safely to their destination. This involves observing pre-driving, driving, and post-driving procedures.

Observing pre-driving procedures is important to avoid distractions and safety issues while driving. Some general pre-driving procedures include:

- Conduct a circle check around your vehicle.
- Ensure passenger seat belts are working properly.
- Park vehicle at a designated space before loading your passenger(s).

- Ensure the passenger is securely seated before closing the door.
- Enter information in the GPS navigation system before starting the journey.
- Let the passengers know you are about to begin the journey.
- Lock the doors before you begin your journey.

Drivers must observe rules of road, road signs, and contribute to the safety of other road users and their passengers when driving.

Note that you are responsible for the driving decisions you make. However, the decisions of other road drivers may affect you. It is important to do the following:

- Monitor your mirrors and shoulder check as often as you should.
- Do not engage in activities that will distract you.
- Advise passengers that are engaging in activities that could cause distractions or safety concerns accordingly.
- When transporting a passenger accompanied by a pet or service animal, the *Traffic Safety Act* requires you to ensure the animal does not impede or interrupt the use of wheels and other equipment, or cause a distraction.
- Practise proactive driving tactics.
- Avoid accelerations, stops, and manoeuvres that will push your passengers forward, backwards, or sideways.
- Adjust your speed within the legal limit for your passenger's comfort.

Drivers should exercise caution when driving within limits. Adjust your speed to align with cars in front of you or as an emergency vehicle approaches. Avoid driving below the approved speed limit, as this may cause confusion and create a hazard for you or other drivers.

Unsafe driving and exceeding speed limits exposes the driver, passengers, and other road users to the risk of road accident.

This can impact a driver's ability to:

- react to actions or detect hazards.
- safely negotiate curves, lane changes, or manoeuvre.

***Note**: Speeding increases stopping distance. This may put vulnerable road users such as pedestrians with wheelchairs, children and elderly persons are put at a higher risk if you have to make an abrupt stop.*

Post-driving procedures about safely unloading passengers at a designated space.

As a driver, it is important to understand safety measures appropriate for your passengers as they exit the vehicle.

Some general post-driving procedures include:

- Adopt a practice of letting the passengers know they can safely alight the vehicle when you stop/park.
- For passengers with children, assist them by offering to open the doors to avoid having them exiting the vehicle unsafely.
- Offer to assist passengers that may need support with removing their seat belts and disembarking the vehicle.

- Scan the designated parking area for other vehicles that may be parking or leaving.
- Use the vehicle mirrors to scan the sides of the vehicle to ensure no pedestrians, passengers, or cars are unsafely close to the doors before closing or opening.
- Scan the backseat to ensure no items were left behind by the passenger.

Transporting vulnerable people

As a driver of persons with disabilities, you need to be aware of the unique needs of your passengers, who may range from young children to senior citizens. As the needs of passengers may be related to cognitive, developmental, sensory, or physical disabilities, you need to be familiar with ways you are able to provide support. For example, frail seniors and those with reduced mobility may have health conditions that affect their balance and lead to unsteadiness or falls.

As a driver you need to exercise patience. Transporting people with disabilities, mobility devices, or strollers may require some extra loading and unloading time. The most common types of mobility devices are the standard manual wheelchair, the power drive (motorized) wheelchair, and the motorized scooter.

Knowing the needs of your passengers will also help determine how you drive, the assistance your passengers may require in getting on or off the vehicle, and the measures required to ensure their safety.

It is also important to be sensitive to your passenger's personal space. Drivers should recognize that some people may feel uncomfortable if they are in a new environment.

It is important to communicate with your passengers by responding to each person's needs. As disabilities can affect an individual in different ways at different times, never assume you know an individual's needs without first asking.

Above all, be patient, courteous, and understanding of your passenger's needs.

Some people with disabilities may have a service animal, such as a guide dog. You should discuss any allergies, concerns, or reservations with transporting accompanying animals with your employer. Drivers must have an appropriate and safe space for service animals in the vehicle.

The *Traffic Safety Act* prohibits the transportation of animals in a manner that impedes the driver from a free and uninterrupted access to and use of the steering wheel, brakes, and other equipment required to be used for the safe operation of the vehicle.

Provide service animals with space that will keep them and everyone else in the vehicle safe in case there is a collision.

Properly secure wheelchairs, scooters, and other mobility devices in the vehicle once they are loaded into the vehicle.

General rules for communicating

Take time to discover each person's preferred method of communicating. Whenever possible, communicate directly with the person with the disability before addressing an attendant.

One of the most effective ways to assist a passenger is to simply ask.

- Ask your passengers how you can best assist them.

- Inform them of your actions before you do anything and check if it is the best approach.
- Keep asking until you get it right.

When meeting a client for the first time, it is important to review the process that will be followed to transport the individual. This way the client will be reassured and understand what is happening.

When talking for any significant time to those using wheelchairs or mobility devices, place yourself in front of them, at their eye level.

Offer assistance to people who can walk when it looks like it is needed, but wait until your offer is accepted before you help.

When assisting people who are visually impaired, it is important you identify yourself. Offer to help by saying something like, "You can take my arm" or "May I help/guide you". If your help is accepted, let the person being guided take hold of your arm.

When assisting passengers who are hearing impaired, gesture with your hand or touch their arm lightly to get their attention.

It is important not to move passengers using mobility devices (i.e., wheelchairs, scooters, etc.) without informing them first.

General rules for driving

Make sure passengers are properly secured in the vehicle (both seated and wheelchair passengers).

Drive smoothly, avoiding sudden stops, starts, and swerves that may cause passengers to shift or lose their balance. Ease around corners.

Maintain a comfortable temperature and air circulation inside the vehicle.

Keep the noise level in the vehicle, including music or radio, to a level comfortable for your passengers.

Keep the season in mind; with the winter cold, open the doors only when necessary.

General rules for assisting a person with a wheelchair

Ensure that the passenger's feet do not slip from the wheelchair foot rests.

Push the wheelchair at a normal walking speed. Watch at least three metres (10 feet) in front of you and along the sides of the wheelchair.

Watch for small cracks or bumps in your path and for other people and objects. Keep your pace slow. Gently tilt the wheelchair over large bumps or cracks.

Judge distances by the front of the foot pedals rather than the front of the seat.

Watch for loose handle grips or armrests that are not locked into place.

Be careful not to bang the wheelchair or handle it roughly.

Apply the wheelchair brakes when the wheelchair is stopped.

General procedure for assisting a person with a scooter

Depending on the type of vehicle you drive, the passenger may choose to transfer from the scooter to a seat. Passengers who can transfer to a seat are encouraged to do so. The following procedure is recommended for a passenger using a scooter:

- Ask the passenger to manoeuvre the scooter to a secure spot.

- Turn off the scooter power.
- Remove the armrest on the side closest to the transfer area, or swivel the seat of the scooter.
- Assist passenger to the seat of the vehicle.
- Secure the scooter.

General rules for loading and unloading from a bus

Knowledge of how to load and unload passengers with mobility devices is an important part of driving a bus.

The procedures to safely load and unload passengers with mobility devices may vary depending on the type of bus you are operating, loading and unloading routes and facilities, and prevailing weather conditions. Your employer may provide additional training on how to effectively load and unload passengers with disabilities and mobility devices.

Prior to loading or unloading a passenger with a mobility device, you need to consider the following:

- Where to stop at a designated stop so that loading and unloading is faster and easier and will leave enough room for ramp/lift.
- Where to stop so that you can be seen by other motorists.
- Where to stop if your original stop is not available.
- Understand how to properly operate the loading and unloading components/features of the vehicle you are operating.

Transporting people with language barriers

Language barriers can be one of the biggest challenges that many immigrants and newcomers face. To minimize language barriers when accessing transportation, it is important to recognize that they are probably anxious about getting to their destination and that you as the driver might be their only resource. Therefore, be patient and understanding when trying to communicate with these passengers.

While it may be difficult to overcome language barriers, here are some strategies you can take to communicate with these passengers to ensure their safety and comfort during the trip:

- Use plain language.
- Talk slowly and clearly, instead of talking quickly.
- When safe (i.e., not while driving on the road), enlist the use of technology.

Transporting children

It is the driver's responsibility to ensure that all passengers under the age of 16 are properly restrained in a seat belt or a car seat. The laws stipulate that a driver must ensure that:

- a child that weighs less than 18 kilograms or 40 pounds will require a car seat,
- the car seat is properly installed, and
- the child is properly secured in the car seat.

8

Transporting Dangerous Goods (Class 1 and Class 3 vehicles)

The laws on dangerous goods state that no one shall handle, offer for transport, or transport dangerous goods unless they are trained or they work in direct contact with someone who is trained.

Training requirements

Carriers are responsible to make sure their employees have the proper training to work safely with dangerous goods. This usually means a formal in-house training program to earn a Dangerous Goods Training Certificate. This certificate shows that the employee has successfully completed the training. Carriers can provide their own training or may hire someone to do the training for them. However, in all cases, the employer must be satisfied with the training, and sign the certificate of training indicating that the driver has successfully completed the dangerous goods course.

A driver of dangerous goods is required by law to produce a certificate of training, if asked to do so by a dangerous goods inspector.

What is a dangerous good?

There are nine hazard classes of dangerous goods. Within some classes there are divisions.

***Note**: The class numbers identified below refer to classes of dangerous goods, not classes of driver's licence.*

Class 1:

Explosives

1.1 A substance or article that explodes as a mass.

1.2 A substance or article with a fragment projection hazard, but not a mass explosion hazard.

1.3 A substance or article that has a fire hazard along with either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard.

1.4 A substance or article that presents no significant hazard, with explosion effects that are largely confined to the package and no projection or fragments of appreciable size or range are to be expected.

1.5 A very insensitive substance that has a mass explosion hazard like those substances in 1.1.

1.6 An extremely insensitive substance that can have a mass explosion hazard like those substances in 1.1.

Carriers who intend to transport or offer to transport explosives should consult with Natural Resources Canada, who administer the Explosives Act and Explosives Regulations.

Class 2:

Gases

2.1 A flammable compressed gas.

2.2 A non-flammable, non-toxic compressed gas.

2.3 A toxic compressed gas.

Class 3:

Flammable liquids

A liquid with a closed-cup flash point of less than 60.5 degrees Celsius.

Class 4:

Flammable solids, substances liable to spontaneous combustion, and substances that emit flammable gases on contact with water

4.1 A solid that:

- ignites easily while it is being transported,
- burns vigorously and persistently, or
- contributes to fire through friction or from heat kept during manufacturing or processing.

4.2 A substance that might spontaneously combust when exposed to air, or might spontaneously heat up to the point where it ignites in contact with air.

4.3 A substance that might emit flammable gas(es) or create enough heat to ignite gas(es) if it comes in contact with water or water vapour.

Class 5:

Oxidizing substances and organic peroxides

5.1 A substance that contributes to the combustion of other material by yielding oxygen or other oxidizing substances, whether or not the substance itself is combustible.

5.2 An organic compound that has the bivalent "-O-O-" structure that is a strong oxidizing agent and may be liable to explosive decomposition or is sensitive to heat, shock, or friction.

Class 6:

Toxic substances and infectious substances

6.1 A solid or liquid that is toxic when:

- its vapours are inhaled,
- it comes in contact with skin, or
- it is ingested.

6.2 Infectious organisms or organisms believed to be infectious to humans and animals.

Class 7:

Radioactive materials

Radioactive materials are not named, only described by activity or package requirements.

Carriers who intend to transport or offer to transport radioactive materials should consult with the Canadian Nuclear Safety Commission, who administer the Nuclear

Safety and Control Act and Packaging and Transport of Nuclear Substances Regulations.

Class 8:

Corrosive Materials

Corrosive materials will corrode metal, human skin, and internal tissue.

Class 9:

Miscellaneous products or substances

9.1 Miscellaneous dangerous goods.

9.2 An environmentally hazardous substance.

9.3 A dangerous waste.

Dangerous occurrences

A driver who is in charge of, in management of, or in control of dangerous goods when a dangerous incident occurs such as a leak or a collision, or an unintentional release or near release, must immediately notify:

- the local police
- Government of Alberta, Alberta EDGE (Environment and Dangerous Goods Emergencies at 1-800-272-9600)
- the owner of the vehicle
- the employer
- the person or company who owns the consignment of dangerous goods.

Documents

Unless exempted, every driver who transports dangerous goods, must have with them a copy of the shipping document, waste manifest, or any other of the document(s) required by law. The document(s) must be within reach or in a pocket mounted on the driver's door when the driver is in the cab of the truck. When not in the cab, the document(s) must either be on the driver's seat or in the pocket on the driver's door.

When a parked trailer carrying dangerous goods is not attached to the tractor, the person in charge of the parking area must keep one copy of the documents. If there is no one in charge of the parking area, a copy of the documents in a waterproof container should be attached to the trailer, in a place easily seen and accessible.

When a driver is making more than one delivery of dangerous goods, the change in quantity of dangerous goods must be shown on the shipping document or on a document attached to the shipping document. This must be done after each delivery.

Safety marks

Safety marks, when needed, will be supplied by the consignor. A driver who transports dangerous goods has the responsibility to make sure the vehicle has all the proper safety marks, placards, or orange panels on it before it is loaded. The safety marks must be placed on each side and each end of a trailer or transport unit.

Placards and panels may be moved to the front of the lead vehicle so the safety marks are visible. The safety marks must stay on the vehicle or large container until no hazard exists. This means the dangerous goods have been unloaded and the container or vehicle cleaned and purged of all residues of dangerous goods.

If the dangerous goods placards and panels are lost, damaged, or defaced during the trip, the carrier must replace them.

***Note**: Every vehicle used to carry Class 1 material, Explosives, must carry a document signed by the owner or the person leasing the vehicle, indicating the name of the driver(s) authorized by them to operate or accompany the vehicle.*

For complete information regarding the transportation of dangerous goods,

please call:

1-800-272-9600 (for toll free service from anywhere in Alberta), 24-hour service.

9

Emergency Situations

Fire and fire extinguishers

A fire can start from several causes.

Here are some tips to prevent fires.

- Never start a vehicle with a fuel leak. Repair the leak and use an approved absorbent material to soak up the fuel spill.
- Shut off the engine when refuelling.
- Touch the fuel hose nozzle against the filler pipe of the vehicle tank before filling to ground it. This prevents sparks caused by static electricity.
- Do not smoke near the fuelling areas.
- Check your tire pressure often. Soft tires build heat and can cause a fire.
- Ensure that all your vehicle's brakes are fully released when the vehicle is moving. Dragging brakes generate heat that can ignite grease in the hubs when the vehicle stops.

If you are carrying passengers on a bus and discover a fire, or danger of fire, stop immediately in a safe location. Get your passengers off the bus and to a safe spot at least 35 metres (115 feet) from the vehicle. Portable fire extinguishers are carried in the driver's compartment in most commercial vehicles.

Fire extinguisher operation

Do not try to put out a fire that is beyond your capability or that of the fire extinguisher.

Remember, depending on the type and size of the extinguisher, you will have only eight to ten seconds of chemical discharge.

Although there are different kinds and makes of fire extinguishers, they are all used in the same basic way.

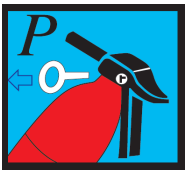
- Remove it from its bracket.
- Pull the safety pin, breaking the seal.
- Approach the fire from upwind if possible.
- Hold the extinguisher in an upright position.

Once the fire is out, do the following:

- Replace the safety pin and return the fire extinguisher to its storage compartment.
- Note on the post-trip inspection that the extinguisher has been used and have the extinguisher recharged immediately or replaced.

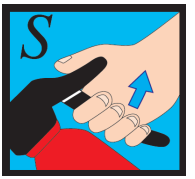
Remember the word PASS.

The word PASS means:

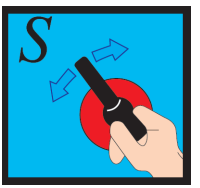


***P**ull the pin and point the nozzle away from you.*

***A**im low and direct the extinguisher at the base of the fire.*



***S**queeze the handle slowly and evenly. Continue to squeeze until the fire is out and/or the fire extinguisher is empty.*



***S**weep the extinguisher from side-to-side. Start at one side of the fire and slowly work to the other side. Do not start in the middle of the fire.*

Vehicle breakdowns

If a breakdown occurs on a highway, outside the limits of an urban municipality between sunrise and sunset (during the day), activate the emergency hazard lights. Place an approved warning device on the highway in line with the vehicle about 30 metres (about 100 feet) in both front and reverse of the vehicle.

If a breakdown occurs on a highway, outside the limits of an urban municipality between sunset and sunrise (in darkness), or anytime when there is not enough light to clearly see people or vehicles on a highway at a distance of 150 metres (about 492 feet), activate the emergency hazard lights. Place an approved warning device 75 metres (about 250 feet) in front of and behind the vehicle.

If a breakdown occurs on the highway, park the vehicle as soon as possible in a safe position on the right side of the highway.

If the vehicle is a bus, also do the following:

- If possible, stop the bus in a safe place as far off the roadway as practical.
- Analyze the situation. If the bus is stopped in a dangerous location, get the passengers off the bus and guide them to a safe location. If there is no danger, it is usually safer if the passengers stay on the bus.
- If you cannot fix the problem quickly or cannot radio or phone for help, stay with the bus.

Avoiding collisions

There are six positions that another vehicle can take in relation to yours, prior to a collision:

- vehicle ahead
- vehicle behind
- oncoming vehicle
- vehicle approaching intersection or at an angle
- another vehicle passing you
- you pass another vehicle.

There is also the risk of collision with animals on the road.

Learning the hazards associated with these scenarios, and the defences against them, can help you avoid most collisions.

Avoiding collision with a vehicle ahead

Collisions with a vehicle ahead can happen for a variety of reasons, but they generally are due to a driver following too closely to the vehicle ahead.

When driving a larger commercial vehicle, it will take longer to bring the vehicle to a full stop than it will be for a smaller, lighter vehicle. In order to defend against this a collision with a vehicle ahead, stay alert and keep a safe following distance.

Remember the four-second rule

- Watch the vehicle ahead pass a stationary object (such as a power pole).
- Count:
  - One-thousand-and-one
  - One-thousand-and-two
  - One-thousand-and-three
  - One-thousand-and-four.

- If your vehicle passes the same object before the you stop counting, the following distance is too close. Slow down a bit to increase following distance.
- Repeat the count process until your vehicle is at least four seconds behind the vehicle ahead.

There are times when the following distance should be increased to more than four seconds, such as driving behind:

- Oversize vehicles that obscure the driver's vision;
- Dangerous goods carriers;
- Vehicles that stop frequently, such as delivery trucks;
- Vans, other school buses, etc.;
- Two-wheeled vehicles such as motorcycles or bicycles
- Vehicles being driven erratically
- Emergency vehicles

Also increase following distance to more than four seconds in poor road conditions and under conditions that reduce visibility such as fog, snow, and smoke. Also leave more space in areas where traffic intersects, merges, or diverges.

Avoiding collision with a vehicle behind

A driver behind you, who is following too closely to your commercial vehicle, can create hazardous situations. Be aware of any vehicle following too close. Allow or encourage them to pass if possible.

If your commercial vehicle is already travelling at the maximum posted speed limit, slow down a little to see if the driver behind you will pass. If the driver behind you stays behind, then increase your distance from the vehicle. This will give the driver behind you more time to react to a sudden or unexpected situation.

Avoiding collision with a vehicle on the side

There is less space on each side of a larger commercial vehicle. The length of your commercial vehicle, and the close proximity of your commercial vehicle to the vehicle in the adjacent lane, may increase the chance of being struck if a vehicle suddenly changes lanes or drifts out of their lane on a turn.

Manage space around your commercial vehicle by keeping it centred in the lane.

Also, avoid traveling in dense traffic. Find an open spot to drive whenever possible. When an open spot is not available, stay aware of the traffic around your vehicle and avoid driving in other vehicles' blind spots.

Avoiding collision with an oncoming vehicle

One of the first rules of the road we learn is that we should drive on the right side of the road. There are times when it is permissible to venture into the left side of the road (e.g., passing another vehicle), but these are special instances. If everyone carefully followed the rule of staying to the right, there would be far fewer head-on collisions.

Other than when passing another vehicle, there are four reasons a driver could be on the wrong side of the road:

- A problem in their lane. Trouble in a driver's own lane such as a construction barrier, animal, pedestrian, or bicycle may cause a driver to swing left to avoid the problem.

- Faulty driving manoeuvres, usually due an error in judgement. For example, making a wide right turn (which may be necessary for larger vehicles), or misjudging the distance required to pass a vehicle. A vehicle with an extended wheel base may take additional space needed to complete a turn on the street being entered.
- Centrifugal force on curves. Centrifugal force acts on a vehicle by trying to keep it going in a straight line when negotiating a curve. If the driver on the inside of the curve allows centrifugal force to push their vehicle across the centre line, a sideswipe or head-on collision could result.
- Loss of control. Drivers can lose control of their vehicles for many reasons, including
  - Right wheel dropping off pavement edge and the driver overcompensates in making the recovery
  - Loss of visibility
  - Centre line obscured or worn away
  - Falling asleep at the wheel
  - Drug or alcohol impairment
  - Tire blowout
  - Skidding on a slippery surface
  - Poor road conditions
  - Poor judgement.

To avoid a head-on collision, do the following:

- Read the road ahead. Be aware of oncoming traffic and try to anticipate what problems the oncoming driver may encounter causing that vehicle to cross the centre line.
- Ride to the right. Do not crowd the centre line. Leave plenty of room. If there are two lanes available going in the same direction, use the right lane as a matter of preference. In urban areas, the right lane generally moves quicker because vehicles turning right normally cause less delay than those turning left.
- Reduce speed. When there is a potential threat of an oncoming vehicle crossing the centre line, slow down immediately. If necessary, sound your horn and flash your lights to let the oncoming vehicle know you are there. Slowing down quickly will give the oncoming vehicle extra time to get back into the proper lane and avoid a collision.
- Drive right off the road. If the above first three steps do not prevent the oncoming vehicle from approaching your vehicle head-on, then drive off the road to the right. This option will, in almost all cases, be better than a head-on collision. If a collision is unavoidable, try to hit the object or vehicle at an angle rather than head-on to lessen the impact. Never try to out-guess the other driver by pulling to the left.

Avoiding collision at an intersection or angle collision

About half of all two-vehicle collisions occur at intersections. This is largely due to the traffic conflict that exists at intersections, both vehicular and pedestrian. Be prepared for the unexpected.

Common hazards to watch for at an intersection include the following:

- Stale green lights that have been visible for a block or two may change suddenly to yellow. Watch for pedestrian signals that have changed to 'wait' as an indication that a green light is about to change to yellow.
- Vehicles in the left lane waiting behind vehicles that are waiting to turn left may become impatient. Without warning or signal, they may swing into the right lane to get by.
- Vehicles that are sitting at a green light, rather than continuing, may be waiting for other vehicles or pedestrians to clear.
- A driver making a turn may signal and move into the intersection, but then stop unexpectedly even though no traffic or pedestrians are blocking their path.

Avoiding collision with a vehicle passing you

As a commercial driver, you will likely become aware that most motorists would rather drive in front of you than behind you. Some drivers will take unnecessary risks such as:

- staying too close behind your vehicle and darting out to make a pass with limited visibility
- a series of vehicles passing you at the same time, even though the second and subsequent vehicles have extremely limited visibility.

There is potential for three types of collisions: a sideswipe, a cut-off, or being run off the road.

To help avoid a collision, do the following.

If the pass being made by the other driver appears to be safe, then without creating a hazard:

- Maintain your lane position, either in the centre of the lane or slightly to the right, to allow the passing vehicle extra clearance.
- Maintain or reduce your speed, avoid a tendency to accelerate.

If the passing vehicle cuts in too quickly after the pass, slow down to ensure a safe following distance. Depending upon the situation, braking may even be necessary.

If the passing vehicle attempts to abort the pass and attempts to get back in line behind you, accelerate quickly to allow them to pull back into the lane safely.

***Note**: Under the law, a person driving a vehicle must not drive the vehicle so as to overtake and pass, or attempt to pass, another vehicle by driving in a "parking lane". A "parking lane" includes the shoulder of a provincial highway to the right of the solid white line. Using the shoulder of a highway to pass is against the law.*

Avoiding collision with a vehicle that you are passing

Think about passing before you do it. Every time you find yourself in a position to pass you must ask yourself

- What will I gain by passing?
- Is it worth the risk?
- Is the pass necessary?
- Will I need to exceed the speed limit in order to pass?

You may find, after asking yourself these questions, that you do not have to pass after all.

There is nothing wrong with passing another vehicle, as long as it is done where and when it is safe to do so, and can be completed without exceeding the speed limit. Passing also tends to cause significant fuel consumption.

When passing moving vehicles, choose a safe place to pass. Always wait until the pass can be made safely. The Canada Safety Council advocates following the below procedure when attempting to pass:

- Check oncoming traffic and use both mirrors to check the traffic behind your vehicle.
- Check ahead to decide if you have the time and distance you need to move to the left lane and back into the right lane.
- Check behind to determine whether another vehicle is attempting to pass you as you attempt to pass the vehicle ahead.
- Maintain a safe following distance when attempting to pass. The closer you get to the vehicle ahead, the less you can see. Tailgating, in order to pass, cuts down on visibility and the lead vehicle may suddenly slow down or stop leaving you in danger of being involved in a collision with the 'vehicle ahead'.
- When you determine it is safe to pass, accelerate to an adequate speed to ensure a safe pass is possible. If conditions change, you can still change your mind at this point.
- Use your signal lights to warn traffic behind of your intent to pass. An attentive driver in front of you will also see your signal and be alerted to your intent to pass. Check your left mirror and shoulder check to the left.

Treat passing a stalled vehicle the same as passing a moving one.

- When approaching a stalled vehicle from behind, look for any sign that the vehicle may move or discharge passengers.
- Before passing, check clearance and determine if it is safe to change lanes, accelerate, and signal to warn traffic behind of your intent to pass.
- If changing lanes is not possible, slow down and keep the brake covered, while carefully watching for any movement such as wheels turning out, lights coming on, or exhaust coming out of the vehicle.
- After passing the danger, centre your vehicle back in the lane or pull back into the original lane.

Avoiding collision with animals

To the reduce the risk of collision with an animal, do the following:

- Reduce your speed, look well ahead, and use caution in areas with wildlife warning signs.
- Scan the sides of the road for animals.
- Be careful at dusk and dawn, since animals tend to be more active at these times.
- When driving through wooded, rural, or mountainous areas, be especially careful of animals during the spring and fall when animals are most active. During the winter animals may roam on highways to lick salt off roads.
- Watch for sudden, unusual spots of light on or near the road at night. This may be the reflection of your headlights from an animal's eye, but be aware that moose eyes do not reflect lights.

- Flashing lights and honking a horn may divert a deer from crossing the road, but it will not have the same effect on a moose.
- Animals sometimes move in groups. If you see one animal, there may be more.
- If you encounter an animal, brake firmly and don't swerve to avoid it.

In the event of collision

Minor collision without injury

- Stop the vehicle.
- It is a general rule, under most conditions, to NOT MOVE the vehicle until directed by a police officer. However, if there is a danger to other motorists, do not hesitate to move the vehicle off the roadway, where possible. An example of an unsafe position is if the vehicle is positioned across both lanes of traffic on a blind curve.
- Assess the scene. Check on the condition of everyone involved and check the vehicle(s) to ensure that there is no danger of fire. Fire may be likely if there is fuel leak, you see smoke emitting from vehicles involved, or if the collision occurred near flammable material.
- Evacuate if necessary (e.g., there is a fire, danger of fire, or the vehicle is in an unsafe position).
- Place approved warning devices as required.
- Contact the police and summon assistance if necessary.
- Contact dispatch. Arrange to have another vehicle continue your route if necessary.
- Obtain the information required by the carrier and insurance company. This may include licence numbers, names and addresses of occupants of other vehicles involved in the collision, and names and addresses of any witnesses or anyone photographing the scene.
- Do not discuss who was at fault.
- Note the time and place of the collision, vehicle positions, and any marks on the pavement.
- Check with local policy to ensure you are aware of what is required of you in the event of a collision.
- Report the particulars in accordance with local policy and procedures.

You are required to report all collisions to the police or local law enforcement if:

- Anyone has been injured
- Anyone has been killed
- Overall damage exceeds $5,000 (see **alberta.ca/automobile-collisions-insurance** to confirm the current property damage collision (PDC) threshold).
- Any damage has been done to any traffic control device, parking meter or public property.

If police are called to the scene, all drivers must remain.

Major collision

The severity of the collision will determine the order in which you proceed. People may panic and therefore your first job will be to remain calm and attempt to calm others.

- Quickly assess the situation and evacuate if necessary.
- Assign someone to protect the scene to prevent other motorists from becoming involved.
- Set out approved warning devices as required.
- If trained to provide first aid treatment, treat the injured in order of seriousness with the most serious first. Start with those who have stopped breathing, then move to those who are bleeding but still have a chance for survival. Treat for shock and minor injuries last.
- Summon help to the scene as required (e.g., police, ambulance, fire department).
- Follow the last three steps of the procedure for minor collision (see above).

Additional information about collisions for Class 2 and Class 4 vehicles

In addition to the above information, drivers of Class 2 or Class 4 vehicles should observe the following procedures.

If your vehicle carries passengers and it is stopped due to a collision, mechanical failure, road conditions, or driver error, you must determine immediately whether it is safer for passengers to remain in the vehicle or whether passengers should be evacuated.

Passengers should be evacuated if:

- The final stopping point of the vehicle is in the path of any train or immediately adjacent to any railroad tracks.
- The stopping position of the vehicle may change and increase the danger. For example, if a bus comes to rest near a body of water or precipice, it could still move and go into the water or over a cliff, and it should be evacuated. You must be certain that the evacuation is carried out in a manner which affords maximum safety for the passengers.
- The stopping position of the vehicle presents a danger of a collision with traffic on the highway. In normal traffic conditions, a bus should be visible for a distance of 300 metres or more. A stopped position that does not provide such visibility, such as just over a hill or around a curve, should be considered a sufficient reason for evacuation.

Your assessment of the emergency will determine the type of evacuation to be performed.

Evacuating the vehicle

Always evacuate passengers starting with those nearest the door. Your objective is to get passengers off the vehicle safely, in the shortest time possible, in an orderly fashion, regardless of which method is used under a given set of circumstances.

While evacuation procedures will vary depending on the vehicle layout and the situation at hand, the driver must follow the applicable evacuation procedure accordingly. Evacuations should be carefully explained to passengers.

***Note**: Employers will provide bus drivers with a safety evacuation guideline. It is the driver's responsibility to familiarize themselves with the evacuation procedures.*

Front door evacuation procedures:

- Stop the bus, set parking brake, turn off engine, and remove key.
- Stand, open the front door, face the passengers to get their attention, and inform them of the situation.
- Ask passengers to depart the bus in an orderly manner and go to a safe location away from the bus.
- Notify your employer/supervisor as soon as possible.
- Check if all passengers have evacuated the bus.
- After you leave the bus, go to the safe area where the passengers are gathered.
- Take a head count of all passengers.

***Note**: All buses are equipped with emergency windows. These are only to be used if the standard exits are impossible to use due to position of the bus or damage to the bus. Buses may also be equipped with least one roof hatch.*

***Note**: Additional school bus evacuation techniques are covered in the S-endorsement course.*

Evacuating passengers with disabilities

Knowing the abilities and limitations of your passengers is important for a bus driver in an emergency situation. The driver should know the following:

- which passengers can come off the bus by themselves
- which passengers can be removed from their wheelchair
- which passengers must not be removed from their wheelchair.

Wheelchairs should be left on the bus if it is faster to remove only the person. If possible, have the able-bodied passengers assist you with passengers who require extra help.

Any of three techniques can be used to remove a wheelchair passenger: a one-person lift, a two-person lift, or a blanket drag.

To undertake a one-person lift:

- Pass the passenger's closest arm over your shoulder.
- Place one of your arms behind the passenger's shoulders with your hand under the passenger's other arm.
- Place your other arm under the passenger's knees.
- Squat down with feet shoulder-width apart.
- Lift the passenger with the load equally divided between both arms, holding the passenger close to you.

To undertake a two-person lift:

- Move the passenger in a wheelchair as close to the exit as possible.
- Slide the passenger on a seat next to the aisle.
- The taller person stands behind the passenger and the second person stands in front of the passenger and off to the side.
- If the passenger is in a wheelchair, the person in the front should remove the armrests and fold up the footrests.

- The person in the back reaches under the passenger's arms and grasps the right hand to passenger's right wrist and left hand to passenger's left wrist. Another way is to clasp hands across the passenger's chest.
- The person in the front lifts the lower extremities under the thighs and hips.
- Squat down and lift together on a count of three.
- Move to the designated area and lower the passenger on the count of three.

Using a blanket will reduce stress on the passenger's body and will reduce the chance of injury to your passenger and you. The blanket drag is also a way to move a passenger who is too heavy to lift, or a passenger who might be hurt by lifting. This is not a recommended method for a passenger who is medically fragile.

To undertake a blanket drag:

- Fold a blanket in half and place it on the floor next to the passenger.
- Lower the passenger's legs onto the blanket first, then the body.
- Place the passenger with their head toward the exit.
- Wrap the blanket around the passenger to prevent their arms and legs from being caught on obstacles.
- Grasp the blanket near the passenger's head and carefully drag the passenger to the exit.

Remember, in all emergency situations, it is not enough for you to know what to do. Your passengers must also know what to do. Clear communication with them is important.

Always review local policies and procedures with your employer.

Restraint cutters

Special restraint cutters allow you to remove tie-down straps or other occupant restraints quickly in an emergency situation. The restraint webbing fits into the slot on the restraint cutter and the razor-sharp blade in the slot cuts the strap.

Store the restraint cutter in a location that is easily accessible to the driver, yet out of easy reach of the passengers.

Organize bystanders to render assistance

In addition to those who are actually involved, there will likely be bystanders who are curious to see what is happening.

Most people who find themselves at the scene of a collision would like to help, but often do not know what to do.

If they are not organized, such people tend to cause congestion and confusion at an emergency scene. However, if you take charge and approach them in a calm, assertive manner, they can help you bring the collision scene under control by performing tasks such as:

- Rendering first aid assistance
- Finding witnesses
- Directing traffic
- Setting out emergency devices to protect the scene
- Obtaining blankets, bandages, etc.
- Notifying medical/police/authorities
- Supervising passengers.

There are many ways you can recruit others to help you. To maximize your chances of gaining cooperation, the following points are suggested:

- Remain calm at all times. This will instill confidence and increase the chances that bystanders will be willing to follow your instructions.
- Select responsible individuals to help.
- Ask for their cooperation to carry out specific tasks. Outline directions for your request briefly, but clearly, keeping to the point.
- Ask the individual to repeat the directions back to you, to ensure they clearly understand what is required.
- Have the individual report back to you upon their successful completion of the task, or other relevant information. This is important to avoid assumptions that certain tasks have been done when, in fact, they may not have been done.

The following is an example of how you might provide instructions:

"I need your help to direct traffic around the scene. I would like you to go about half a kilometre back down the road, and begin to direct traffic around the crash. Instruct people that everything is being handled and to keep moving slowly past the scene. Would you repeat what I have just asked you to do?"

10

Fuelling and Fuel Efficiency

Fuelling a vehicle

General considerations

- Do not add fuel into the tank when the engine is running.
- Do not add fuel into the tank while a radio transmitter is on.
- Never overfill a fuel tank.
- Do not smoke, and be sure no one around is smoking.
- Do not use a cell phone while fuelling.
- Do not repeatedly enter and exit the vehicle while fuelling. Doing so can cause static build-up that can cause a static spark to occur when handling the fuel nozzle.
- Vehicles such as a bus, school bus, or taxi should not be fuelled when passengers are on board. Be sure there is sufficient fuel for the trip before picking up your passengers.

Gasoline and diesel

- Do not add fuel into the tank when the engine is running.
- Never overfill the fuel tank.
- In the event of a major or minor fuel spill, notify the attendant to get it cleaned up immediately using an approved absorbent material.
- Do not add fuel close to electrical sparks or open flame.

Propane

- Only people with the proper certification or training can refuel a propane vehicle or container.
- Ensure there is nothing that could ignite within three metres (10 feet) of the dispenser or container being filled.
- Wear proper protective gloves and clothing, such as long sleeve shirts.
- Engine and electrical accessories must be switched off.
- Properly attach the filling hose to the vehicle's fuel tank.
- Open the fixed-liquid level gauge (bleeder valve).
- When the fuel level reaches the maximum permitted in the tank, liquid propane in the form of a mist will be discharged from the liquid level gauge. Fuelling should now end.
- The fixed level gauge must be shut off and the fill-line disconnected.
- The magnetic float gauge attached to the tank should indicate that the tank is now filled to capacity. The total capacity of the tank is approximately 80 per cent.

Fuel efficiency

A growing priority

The following information has been provided by Natural Resources Canada in conjunction with the Government of Alberta to introduce energy efficient practices that can reduce fuel consumption and emissions. FleetSmart is a component of this program.

As fuel prices fluctuate, independent drivers and major transport companies are struggling to accurately budget for fuel costs and are actively searching for ways to keep those costs under control.

Of course, money is not the only consideration. The environment is a factor, too. Nearly 30 per cent of all greenhouse gas emissions in Canada are produced by the road transportation

sector, a significant portion of them from heavy-duty vehicles. Fortunately, there are many practical decisions you can make as a driver to be more fuel efficient, from vehicle specifications to behind-the-wheel techniques and behaviours.

Making smart choices

Your driving habits can reduce the amount of fuel you burn. Here are some tips you can take:

Preparation and planning

- Plan your route carefully. Flat routes are more fuel efficient than mountainous routes. Highway driving is more fuel efficient than "inner city" driving.
- Carefully consider your vehicle specification options and always maximize your payload. Instead of 60 per cent capacity, try to achieve 80 or 90 per cent capacity.
- Read the owner's manual for your vehicle and follow the manufacturer's driving recommendations.

Fuel and your engine

- Using the proper grade and type of fuel can improve fuel economy by as much as three per cent.
- A direct drive transmission instead of an overdrive transmission may reduce fuel consumption by up to two per cent.

Vehicle choice and accessories

Optimize tractor aerodynamics:

- reducing aerodynamic drag by 10 per cent can increase fuel efficiency by five per cent. Consider using doubles or triples instead of single trailers where authorized.
- Use rib design tires in all positions. This is more fuel efficient than using lug tires on the drive and steering axle.
- Consider using low rolling resistance tires. When looking at the specifications of a new truck, remember that super single tires provide low rolling resistance as well as lower height and less weight.
- Choose lighter truck specifications where appropriate. Less vehicle weight means better fuel economy and can also offer more freight capacity, increasing income per kilometres traveled.
- Use accessories such as oil pan heaters and block heaters (to help with cold starting and hasten lubrication), fuel heaters (to prevent fuel gelling), thermostatically controlled engine fans, winter fronts, battery blankets, and in-cab auxiliary heaters to improve productivity and fuel efficiency.

Dealing with the weather

Weather conditions affect fuel efficiency. Driving on snow-covered roads can increase fuel consumption by 15 to 20 per cent, and fuel economy can be significantly affected by heavy winds. Here are a few ways to minimize the effects of weather:

- Avoid bad weather where possible by changing trip times or routes.
- Adjust speed to suit the conditions. For example, reduce speed when there's a strong head wind.
- Slow down and maintain safe following conditions in order to better anticipate other vehicles in front of you.

- Do not park your tractor-trailer on an icy grade. Getting stuck wastes fuel and time.

***Note**: Choosing to drive a flat, multi-lane highway improves your fuel efficiency by:*

- *four to 11 per cent compared to a flat two-lane highway;*
- *as much as 18 per cent compared to a mountainous highway; and*
- *25 to 35 per cent compared to taking a suburban route.*

Caring for your vehicle

Preventative maintenance plays a huge role in maintaining the health and efficiency of your vehicle. When your vehicle is serviced properly, you can run more efficiently and avoid unexpected downtime. Small problems should be fixed before they become bigger - and more expensive. In addition to regularly scheduled maintenance, you should also:

- Ensure your tires are inflated according to the manufacturer's recommendations. One per cent of fuel is wasted for each 10 pounds per square inch of under inflation.
- Before you hit the road, make sure you have performed a pre-trip inspection. Not only is it the law, but it can also help you avoid unwelcome breakdowns during your travels.
- Perform a post-trip inspection to spot problems that could delay you next time.
- Ensure all fluid levels are correct. Under-filling and over-filling can both damage your vehicle.
- Monitor your restriction indicator for signs of the air filter becoming plugged or contaminated.
- Continually monitor your vehicle's condition during your trip: check gauges, tires, and cargo every three hours.

Smart driving practices

Fuel efficiency starts when you turn your engine on. Proper warm-up helps lubricate components and seals, reducing wear and leakage. Starting your vehicle properly can save money on fuel. Keep the following in mind:

- When starting your vehicle make sure you use zero throttle and are in a gear that does not need any throttle.
- Do not pump the throttle of a fuel-injected engine. The amount of fuel required for starting is pre-measured. Similarly, do not pump the throttle when cranking with older mechanical engines. Doing so wastes fuel and can damage cylinder walls.
- Use ether sparingly when having difficulty starting your engine. Excessive use can harm the engine.
- When warming up the engine do not increase the engine speed. Five minutes of idling for a warm-up is generally adequate, and cool down is provided when pulling-in for parking.
- Ensure oil and air pressure are in their normal operating ranges during start-up.
- Warm your vehicle up after the initial idle time by driving easily. Do not try to get too much speed out of the engine by pushing the throttle down hard.
- Back off the accelerator when going over the top of a hill and let gravity and momentum do the work.

- Use cruise control where appropriate.
- Reduce your average speed. Driving fast eats up fuel, no matter what you drive.
- Change gears smoothly. Shifting smoothly will result in about 30 per cent improvement in operating costs.
- Always use the clutch (for a manual transmission). Failure to do so can wear the gear teeth down in the transmission.
- Practise progressive gear shifting at approximately 1600 rpm. Shifting before you reach the maximum governed rpm reduces equipment wear, decreases noise levels, and saves fuel.
- Run the engine in the highest gear range to keep it in a low rev range.
- Use your retarder properly and turn it off when you do not need it. Let the terrain work for you.

Idling

Avoid excessive idling. Idling a truck engine burns up to four litres of fuel per hour at 900 rpm.

Turn off your engine when you stop for any length of time. Ten seconds of idling uses more fuel than restarting your engine. By turning off your engine you will save fuel, reduce maintenance requirements, prolong engine life, and prevent unnecessary emissions.

***Note**: If a ten-truck fleet were to cut idling by an hour a day for 260 days, it would save approximately 10,400 litres of fuel (which works out to $11,440 at $1.10 per litre). A 100-truck fleet would save $114,400 and a 500-truck fleet $572,000.*

Taking advantage of technology

New engine designs offer great benefits, delivering more horsepower and torque in lower rpm ranges. You can downshift at about 1200 rpm and up-shift at about 1600 rpm, rather than 2000 rpm.

You shift less, save money, and generate fewer emissions.

Keeping up with road conditions

Smart, fuel-efficient driving is also safe driving. Different road and traffic conditions present different challenges. As a driver, it is important for you to keep the following in mind:

- Light: Adjust your driving based on visibility. Wear sunglasses in bright conditions and reduce speed in poor light conditions.
- Posture: Keep your seat adjusted to the correct position for comfort, alertness, visibility, and access to controls.
- Traffic: Try to travel at the same speed as other traffic, staying within the speed limit. Be considerate and give way to other drivers.

Street smart

Managing your road speed with smart driving techniques allows you to keep your speed more constant and increase fuel efficiency. Generally, for every 10 km/h over 90 km/h you use 10 per cent more fuel.

Driving defensively

Smart driving is both an attitude and a skill. A sharp mind and shrewd decision making can go a long way toward protecting your safety and the safety of others, not to mention increasing fuel efficiency. Defensive driving allows you to anticipate hazards and maintain a constant speed. When you drive defensively, you conserve your momentum, which means you do not have to continually build up lost speed. Power not used is fuel not burned. Here are some helpful tactics:

- Do not let frustration push you into making unsafe passes or other manoeuvres.
- Look ahead and anticipate stops.
- It is more efficient to coast to a stop than to brake.
- Maintain a safe following distance of four seconds.
- Be aware of your blind spots and check them regularly.
- Be aware of your own physical and mental condition including the effects of alcohol and drugs, age, attitude, illness, fatigue, emotion, and diet.

Safe stopping

Keep a safe following distance so you can always brake safely and efficiently. Driving at 70 km/h requires a stopping distance of about 300 feet (90 metres).

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