RSEP – Car : Instructor

In-class session

Fact sheets binder

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Note : In this document, the male gender is used without discrimination and only for the purpose of lightening the text.

TABLE DES MATIÈRES

MODULE 1 : THE VEHICLE

FACT SHEET

Duration : 2 hours

Summary of content

- Representation of the vehicle
- Knowing the vehicle
- Preparing the vehicle and baggage
- General principles of eco-driving

Competencies

The purpose of this activity is for the learner to be able to:

1.1	*1.1.1*	Determination of the personal characteristics required for driving a vehicle
1.1	*1.1.2*	Determination of one's values, beliefs, motivations, influences and lifestyle in relation to the profile of a prospective driver
1.4	*1.4.1*	Determination of the principles relating to ecological, economical and safe driving (eco-driving)
1.4	*1.4.2*	Determination of the advantages of ecological, economical and safe driving (eco-driving)
2.1	*2.1.1*	Adequate identification of the technical characteristics of the vehicle used
2.1	*2.1.2*	Adequate identification of the technical characteristics of the vehicle used
2.1	*2.1.3*	Safe seating of occupants
2.1	*2.1.4*	Safe transportation of baggage and animals
2.1	*2.1.5*	Safe driving position

Activity

1. Representation of the Vehicle

Material required

- Paper and pencil

Content

Introduction

Module 1 aims to bring the learner to know the characteristics, controls and features of a passenger vehicle, safety features included. It also aims to show the learner how to prepare the vehicle and how to transport objects and baggage. Special attention must be paid to the importance of wearing a seat belt, given the high number of young drivers killed in accidents while they were not wearing one. Finally, the module introduces the principles of eco-driving. An activity focused on the representation of the vehicle is proposed in order to stimulate dialogue.

In Module 1, the learner must already begin to become familiar with traffic rules and the rules relating to road signs and traffic signals, because acquisition of that theoretical knowledge will be evaluated in Module 5 of Phase 1.

Handbooks are a good initial source of information for acquiring theoretical knowledge. In order to be well prepared, the learner must consult the Driver's Handbook, which provides a summary of the main rules of the Highway Safety Code (HSC) and those relating to road signs and traffic signals. Learners can also evaluate their knowledge using the review exercises.

This fact sheet follows the same order as the computer-assisted (PowerPoint) presentation of Module 1, The Vehicle.

→ OUTLINE OF MODULE 1, THE VEHICLE (SLIDE 2)

- Activity: Representation of the Vehicle (see the related activity sheet)
- Knowing Your Vehicle
- Seat Belts
- Preparing the Vehicle and Carrying Baggage
- Principles and Advantages of Eco-Driving
- Acquiring Knowledge
    - Rules of Traffic and of Road Signs and Traffic Signals

There is no obvious relationship between vehicle types and accidents involving young drivers. In most cases, a multitude of complex, and often interrelated, factors contribute to the sorry road safety record of young drivers: the driver's age and sex, driving experience, impairment (due to alcohol, drugs, fatigue, emotions, etc.), road conditions, weather conditions, etc.

However, we can assume that reasons for driving other than wanting to reach a destination (showing off, thrill-seeking, being acknowledged by peers, etc.) may constitute a characteristic aspect of the lifestyle of high risk drivers.[1]

→ KNOWING YOUR VEHICLE (SLIDES 7 AND 8)

Invite learners to refer to their owner's manual for more detailed information on accessories and equipment, and how to adjust them.

Use the guide *Driving a Passenger Vehicle* and any other material previously developed by the driving school for this part of the module.

- Driving Position (Driving a Passenger Vehicle (DPV)
- Safety Features (DPV)
- Safe Seating of Occupants (Binder)

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[1]. Organisation for Economic Co-Operation and Development*, Young Drivers: The Road to Safety* (Paris, 2006), p. 76.

→ SEAT BELTS (SLIDES 9 TO 15)

To date, seat belts provide the best protection in an accident, which is why drivers have been required to wear them since 1976.

The number of occupants in a passenger vehicle must not exceed the number of seat belts installed in the vehicle. Section 426 of the HSC stipulates that the driver of a road vehicle built after 1973 may not carry more passengers than the number of passenger seats with seat belts installed by the manufacturer. Failure to comply with this rule renders the driver liable to three demerit points and a fine of $115 to $154.

It is important to wear a seat belt, because it is the combined use of seat belts and air bags that offers the best protection against head and chest injuries.

Measures can be taken to reduce the risks related to the deployment of air bags:

- Move the seat as far back as you can and still be able to easily reach the pedals, keeping a distance of 25 cm between the centre of the air bag cover and the middle of the chest.
- Recline the back of the seat slightly.
- If the new driving position reduces your field of view, raise the seat, if the vehicle allows, or use a cushion of non-slip material.
- Tilt the steering wheel down if it is adjustable. This directs the air bag toward the chest rather than the head and neck.

The shoulder belt must never be worn under the arm or behind the back, because, in a collision, the upper part of the body would swing forward, the head would hit the inside surfaces of the vehicle and the belt would press into the abdomen, possibly causing serious, and even fatal, injuries to internal organs.

Seat belts are less effective if they are not properly adjusted. When buckled, the belt must be snug, with no slack.

Winter clothing can be misleading. It is necessary to check that the belt crosses the proper areas.

Pregnant Women

It has been proven that, in nearly all road accidents involving pregnant women, it is the death of the woman that leads to the death of the fetus. The only way to properly protect the fetus in a collision is to protect the life of the expectant mother. The seat belt must be properly adjusted:

- The lap belt must always cross over the pelvis, as close as possible to the pubic bones, not over the abdomen.
- The shoulder belt must always cross over the clavicle, not over the neck.
- The seat belt should be snug, with no slack.

Children

Section 397 of the HSC stipulates that, in a moving road vehicle, a child whose sitting height, measured from the seat to the top of the head, is less than 63 cm must be seated in a restraint system or on a booster corresponding to his or her weight and height. The child and the restraint system must be installed in accordance with the manufacturer's instructions.

Children whose sitting height is 63 cm or over should be seated on a booster until they are able to safely use a seat belt alone.

Before letting a child use the seat belt alone (without a booster), one must make sure that:

1. when seated on the bench seat, the child's back is flat against the back of the seat and his or her knees are bent over the edge of the seat. The child must be able to maintain this position during the whole trip.
2. when the seat belt is fastened, it crosses over the shoulder and hips. It must not rest near the neck or on the stomach.

A seat belt must never be placed behind the child's back or under his or her arm. In the event of a collision, it could cause serious injuries to vital organs like the lungs or heart.

The back seat of the car is the safest place for children who are 12 years old or younger. Seated in the back, they are as far away as possible from the point of impact in the event of a head-on collision and from the front air bags, which could cause them serious, and even fatal, injuries.

Child Safety Seats

In an accident, child car seats increase a child's chances of survival by 70%. In order to be effective, the seat must correspond to the child's weight and height and be properly installed.

Each type of seat (infant seat, child seat and booster) must be installed, and the child must be seated, according to the manufacturer's instructions. It is also necessary to check the instructions in the vehicle owner's manual on installing the seat on the bench seat.

Installing a car seat and seating the child in the seat is not as simple as it looks. Two thirds of children are not safe during trips on the road network.

→ KNOWING YOUR VEHICLE (CONT.) (SLIDE 16)

- Sense of Safety and Bodily Capacity (*Binder*)
- Controls (*DPV*)
- Tires (*Binder*)
- Visibility Features (*DPV*)
- Communication Features (*DPV*)
- Other Components (*DPV*)

→ PREPARING THE VEHICLE AND CARRYING BAGGAGE (SLIDE 17)

- Regular Checks – Maintenance (*DPV*)
- Eco-Driving (*Binder*)
- Preparing to Carry Baggage (*DPV*)

→ ECO-DRIVING (SLIDES 18 TO 22)

Definition of Eco-Driving

A safe way of driving, inspired by civic-mindedness and respect for the environment. Eco-driving helps reduce fuel consumption and the greenhouse gas emissions that cause global warming. Given its focus on planning, anticipation and cooperation with other road users, it also helps reduce accident risk.

Basic Concepts of Eco-Driving

- Fuel consumption produces carbon dioxide, one of the main greenhouse gases (GHGs).
- GHGs lead to a faster than ever rise in average temperatures. This is referred to as climate change.
- Climate change can cause flooding and erosion in coastal regions, major damage to crops and properties, degradation of forests and water resources, and health problems.

Principles of Eco-Driving

- Trip Planning

Reference: DPV

- Ask yourself whether the trip can be made without using the vehicle:
    - Identify the purpose of the trip and ask yourself whether it constitutes a valid reason for using the vehicle
    - Find alternatives to using the vehicle: walking, biking, taking public transit, carpooling, etc.
- Avoid making several short trips. Preferably, group them together and in a way that reduces the kilometres travelled.
- Plan the route to avoid backtracking or to avoid traffic jams at rush hours.
- Do not use vehicle when smog levels are high.
- Allow sufficient time for trips: avoid sudden braking, rapid acceleration and speeding.
- Avoid steep hills that make the car engine work hard.
- Find routes with the fewest stops possible.

(Ways of applying the principles of eco-driving will be taken up in Module 12.)

Advantages of Eco-Driving

For Road Safety

- Better anticipation
- More predictable driving behaviour
- Calmer driving
- Regular maintenance of the vehicle and checks before long trips increase safety for the driver and the other road users.
- Reducing speed (A 1 km/h decrease in average speed improves road safety by 3%.)
- Deciding not to drive: Where possible, choose an alternative to driving.
- A smooth and consistent driving style, combined with early anticipation of traffic, is beneficial to the other road users and to road safety in general.

For the Environment

- There is less pollution, because of lower carbon dioxide emissions. This directly affects climate change.
- The vehicle is less noisy as a result of driving at lower rpms.
- For Fuel Economy
- Various positive factors, including:
    - reduced speed, smoother driving, suitable tire pressure and lighter loads: fuel consumption drops and, as a result, savings increase.

MODULE 2 : THE DRIVER

FACT SHEET

Duration : 2 hours

Summary of content

- Portrait of a safe, cooperative and responsible driver
- Norms, influences and peer pressure

Competencies

1.1	1.1.1	Determination of the personal characteristics required for driving a vehicle
1.1	1.1.2	Determination of one's values, beliefs, motivations, influences and lifestyle in relation to the profile of a prospective driver
1.1	1.1.3	Recognition of one's abilities and limitations as a prospective driver

Activity

- Portrait of a Driver
- Influence of the Media

Material required

- Questionnaire entitled *Portrait of a Driver*
- Paper, pen and pencil
- Board and marker

Content

Introduction

Module 2 aims to make the learner aware of the factors that influence driving a passenger vehicle: the negative and positive influences of parents, peers and the media; values; beliefs; and motivations. In this module, the learner is also invited to question his or her profile as a prospective driver and to learn the various characteristics of a safe, cooperative and responsible driver. Two activities, dealing respectively with the portrait of a driver and the influence of the media, are proposed to promote discussion.

The fact sheet follows the same order as the computer-assisted (PowerPoint) presentation of Module 2, The Driver.

→ OUTLINE OF MODULE 2, THE DRIVER (SLIDE 2)

- Activity: Portrait of a Driver *(*see the related activity sheet)
- Profile of a Safe, Cooperative and Responsible Driver
- Norms
- Influences
    - Positive and Negative Pressure
    - Personal Values and Beliefs
    - Activity: Influence of the Media
    - Influence of the Media, Peers and Parents

→ PROFILE OF A SAFE, COOPERATIVE AND RESPONSIBLE DRIVER (SLIDE 7)

- Safe Driving

Proactive participation in traffic that helps drivers anticipate potential at-risk situations and follow the rules of the *Highway Safety Code*.

- Cooperative Driving

A proactive, as opposed to reactive or defensive, approach to driving whereby the driver sharing the road applies the rules of courtesy and respects the other road users, particularly vulnerable users, and understands their needs.

- Responsible Driving

The set of individual and collective responsibilities that must be assumed by the driver. Respect for the rules of the road, adoption of safe strategies and informed decision-making contribute to responsible driving.

→ NORMS, INFLUENCES AND PEER PRESSURE

→ WHAT IS A NORM? (SLIDE 8)

A norm is what is to be taken as a model or rule. (*Grand dictionnaire terminologique* [translation])

Legal norms are embodied in laws and regulations. Transgressing them can lead to penalties such as fines.

Social norms determine what an individual may or may not do. They reflect the values of society or a group. Social norms vary depending on the group (young people, seniors, motorcyclists, heavy vehicle drivers, etc.). An individual who transgresses social norms risks moral penalties that may extend to exclusion from the group.

Road user behaviour does not always correspond to prescribed legal norms. Personal decisions (**personal norms**) result from the confrontation between legal norms and social norms. To illustrate, there is a legal norm concerning speed on autoroutes. But, even though everyone knows the maximum speed limit is 100 km/h, the vast majority of drivers allow themselves to exceed that limit and drive at speeds of up to 120 km/h.

→ WHAT IS AN INFLUENCE? (SLIDE 9)

An action exercised on someone or something by a person, thing or situation.

The concept of influence can cover:

- Phenomena of persuasion: convincing someone to act otherwise than they would have or letting oneself be convinced to act otherwise than one would have
- Phenomena of imitation: because one admires someone and wishes to imitate them, gain their recognition and, to some extent, share in their prestige.

Influence is often exercised by a group. Imitation, conformism but also changes in behaviour are manifestations of group influence.

The process of influence lies at the root of leadership: the ability to get others to do what one wants or to adopt one's ideas and cooperate in order to achieve one's goals, without recourse to punishment or promises.

→ DISTINGUISHING BETWEEN POSITIVE AND NEGATIVE PRESSURE (SLIDE 10)

Positive Pressure

A constraint or influence exercised on someone to direct their behaviour or actions so that their actions (or words) will be good, fitting and beneficial.

Negative Pressure

A constraint or influence exercised on someone to direct their behaviour or actions so that their actions (or words) will be harmful, dangerous or damaging.

An example of positive pressure:

People encouraging the designated driver to have a good time without drinking.

An example of negative pressure:

A passenger in your vehicle asking you to speed up so you can reach your destination faster.

→ PERSONAL VALUES AND BELIEFS (SLIDE 11)

What is a value?

A principle that guides the action of an individual, group or organization in society. (Grand dictionnaire terminologique [translation])

A value is a concept describing the beliefs and convictions of an individual or even a society. It determines ways of being and acting that an individual or community recognizes as best. A value is a moral guideline that gives individuals the means to judge their actions and build personal ethics.

Values are subjective and they vary from one culture to the next. They can touch on several spheres: political, religious, moral, ethical, esthetic, social, etc.

Examples of values:

Family, work, equality, freedom, respect, justice, peace, money, power, love, perseverance, mutual help, sharing, commitment, trust, integrity, responsibility

How do values influence driving?

Responsibility

People who advocate responsibility may adapt their driving to help protect the environment. Ecological and economical driving, and using a hybrid or very low fuel consumption vehicle is important to them. They may also choose not to drive and use alternative transportation (public transit, carpooling, bicycling, etc.). They feel responsible and therefore assumes their responsibilities for protecting the environment.

A person may also feel responsible with regard to impaired driving. As a result, they will refrain from driving after consuming alcoholic beverages. Such a person will also see that their friends do not take the wheel after consuming alcohol or using drugs.

Freedom

Freedom is a feeling that can be produced by driving. People for whom freedom is an important value may, beyond feeling free to travel, feel free and indestructible inside their car. This false sense of freedom and safety can lead to overconfidence and recklessness on the road, which makes for dangerous driving.

Respect

People for whom respect in an important value can, in their driving, reproduce behaviours that encourage respect. They will be patient and tolerant toward the other road users, and will avoid behaviours that can lead them to be aggressive. Respect of laws and regulations is also important to these people. While driving, they make sure to obey speed limits, traffic lights, etc.

Communication

People for whom communication is an important value are careful to communicating their intentions to other road users at all times.

Mutual Help

A person who thinks it is important for people to help one another will behave courteously on the road.

What is a belief?

The fact of agreeing with a judgment, even though it is based on mere personal reasons or on a principle whose logical value is not universally recognized. (Grand dictionnaire terminologique [translation])

Examples of beliefs:

Believing that the inside of a vehicle and the vehicle's equipment make the occupants completely safe.

For older people, believing that all young drivers are careless at the wheel.

→ INFLUENCE OF THE MEDIA (SLIDE 13)

Television, films, the Internet, video games and music are popular forms of media that are omnipresent in our daily lives. In an age in which young people grow up in front of computers and TV sets, it is more important than ever that they develop understanding and critical thinking (in order to make enlightened, responsible decisions) regarding these media.

A variety of sources indicate that automobile advertising extolling the virtues of speed, freedom or engine power is likely to influence the behaviour of the youngest drivers, who are more susceptible to advertising and less critical of it. Some people feel, however, that a direct link cannot be drawn between exposure to such advertising and possible changes in behaviour. No federal or provincial legislation currently prohibits automobile advertising that plays up engine power, rapid acceleration, speed, etc. However, work is under way across Canada to establish guidelines, in collaboration with automobile manufacturers.

See the first report of recommendations of the Québec road safety task force (Table québécoise de la sécurité routière): Pour améliorer le bilan routier, TQSR, 2007, 50 pages

→ INFLUENCE OF PARENTS (SLIDES 14 AND FOLLOWING)

According to recent research in road safety, the family environment is still the primary influence on accident risk among young people aged 15 to 25. Parents can have a major influence on the behaviour of their children and road risk. Three processes are at work:

1. The general process of socialization through the family and the transmission of values such as respect for the rules and respect for others;
2. The role models offered by the family. As passengers, children observe their parents' behaviour at the wheel for years;
3. Management of the dangerous phase for people 15 to 25, including their first times as passengers of peers, their progress in driver education and their first years of driving[2].

[2] Jean-Pascal Assailly [http://www.acmf.asso.fr/pdf_ram/pdf/461/461_026.pdf].

Long before they take up driving, children cannot actively use a vehicle, but, as passengers, they are in a position to observe and internalize what their parents do at the wheel: the parents' driving style, attitudes, values, and emotional reactions in a variety of situations, as, for instance, when parents grow impatient with a driver they feel is not going fast enough. As driver role models, the parents are an influence for many years: [TRANSLATION] "When parents commit offences with their children in the back, they endanger their children in two ways: they place them in immediate danger of injury and, over the longer term, they condition the attitudes, values and representations of future road users."[3]

North American studies (Ferguson *et al*) have shown that there is a link between young people's accidents and offences during their first years of driving and their parents' driving style. As a result, parents who commit more offences and have more accidents have children who also commit more offences and have more accidents.

→ INFLUENCE OF PEERS

At the wheel, peer pressure can take the form of passengers influencing the driver's behaviour. A number of studies have shown a relationship between the presence of passengers close in age to the driver and an increase in the level of risk.[4] In addition, it has been shown that young drivers, men and women alike, drive faster and with shorter following distances at intersections when driving with young passengers (i.e. in their age group).[5] It can be hard to resist peer pressure when you are young. The fear of rejection and the need to be accepted and appreciated by a group can make you adopt behaviours that go against your values or beliefs. It must not be forgotten that peer pressure can be positive or negative.

[3]. Ibid

[4]. Organisation for Economic Co-Operation and Development, Transport Research Centre, *Young Drivers: The Road to Safety* (Paris, 2006), p. 51

[5]. Inger Engströme, Petter Gregersen, Nils Hernetkoski, Kati Keskinen, Esko Nyberg, Anders. VTI rapport 491A.2003, Young Novice Drivers, Driver Education and Training (Swedish National Road and Transport Research Institute, 2003), p.39.

[5]. Inger Engströme, Petter Gregersen, Nils Hernetkoski, Kati Keskinen, Esko Nyberg, Anders. VTI rapport 491A.2003, Young Novice Drivers, Driver Education and Training (Swedish National Road and Transport Research Institute, 2003), p.39.

MODULE 3 : THE ENVIRONMENT

FACT SHEET

Duration : 2 hours

Summary of content

- Environmental factors
  - Other road users (courtesy)
  - Road characteristics and weather conditions (see Module 7)
- Rules of traffic and of road signs and traffic signals (quiz)

Competencies

1.3	1.3.1	Obeying laws and regulations
1.3	1.3.2	Determination of the rules of courtesy
1.3	1.3.3	Recognition of misconduct and the possible consequences of irresponsible driving at the personal, occupational, social, economic and legal levels

Activity

1. *Courtesy Feels Good!*
2. *Rules of Traffic and of Road Signs and Traffic Signals (Quiz)*

Material required

- Paper and pencil

Content

Introduction

Module 3 covers the road environment, more specifically, other road users, road signs and traffic signals and pavement markings. It aims to bring the learner to know the rules of proactive and courteous driving, which make it possible to prevent conflict with other road users. It also provides the learner with an opportunity to consider the main sources of irritation while driving, which are most often associated with failure to obey traffic rules. An activity enables participants to evaluate their attitude toward other road users.

The environmental factors that can influence driving, namely, road characteristics and weather conditions, will be taken up in Module 7, The OEA Driving Stategy, because they are related to driving strategies.

As of Module 1, the learner began the process of becoming familiar with traffic rules and the rules relating to road signs and traffic signals, because the acquisition of that theoretical knowledge will be evaluated in Module 5 of Phase 1. In Module 3, a 20-question quiz gives participants an opportunity to test their knowledge.

This fact sheet follows the same order as the computer-assisted (PowerPoint) presentation of Module 3, The Environment.

→ OUTLINE OF MODULE 3, THE ENVIRONMENT (SLIDE 2)

- Activity: Courtesy Feels Good! (see the related activity sheet)
- Environmental Factors
    - Other Road Users
- Quiz on the Rules of Traffic and of Road Signs and Signals

→ OTHER ROAD USERS (SLIDE 5)

The road is a public space that must be shared with other users: drivers, cyclists, pedestrians, motorcyclists, moped and scooter operators and heavy vehicle drivers. Not all these people use the road for the same reasons, travel at the same speed or have the same abilities or reflexes. Nor do all of them have the same protection: some are more vulnerable than others.

→ RULES OF PROACTIVE AND COURTEOUS DRIVING (SLIDE 6)

While on the road, users are constantly interacting with one other. To ensure harmonious and safe traffic conditions, they must act with courtesy, tolerance and respect. In order to avoid conflict with the other road users, one has to anticipate their actions by driving proactively.

→ COURTESY ON THE ROAD (SLIDE 7)

Courtesy on the road begins with respect of the Highway Safety Code (HSC) and traffic rules, but it is not limited to strict observance of regulations. It involves being polite and getting along with other users.

→ IRRITATING BEHAVIOURS (SLIDE 9)

A 2007 survey conducted by the Société de l'assurance automobile du Québec (SAAQ) revealed that 83% of driver's licence holders felt that lack of courtesy at the wheel was a significant problem in Québec, and 55% felt that Québec drivers were not courteous on the road:

- Cutting people off (30%)
- Following too closely (19%)
- Making vulgar gestures, using verbal violence or showing impatience (18%)
- Speeding (17%)
- Honking needlessly (14%)
- Not obeying the HSC (10%)
- Not yielding the right of way (8%)
- Weaving in traffic (6%)
- Not respecting rights of way (6%)
- Not signalling one's intentions (5%)

When faced with aggressive behaviour, a driver must:

- Remain calm
- Avoid looking at the aggressive driver, so as not to increase his or her aggressiveness
- Avoid reacting to provocative words or actions
- Avoid using disrespectful words or actions in response to road users
- Adopt the best means to avoid conflict

As a driver, in a situation where an aggressive driver gets out of his or her vehicle and comes toward you, you must:

- Remain in your vehicle, make sure the windows are rolled up and lock the doors
- Avoid arguing with, looking at or gesturing rudely to the aggressive driver
- Leave the premises and go to a place where you can get help

→ CONSEQUENCES OF AGGRESSIVE DRIVING (SLIDE 10)

Under the HSC, an action resulting from aggressive driving can be punished if a peace officer feels it could have endangered human life or safety (section 327).

- Fine: $438 to $865
- 4 demerit points

Aggressive driving can be regarded as "dangerous driving" under the Criminal Code (section 249(1)). Depending on the seriousness of the act committed and its consequences, the maximum prison sentence ranges from 5 to 14 years.

→ RULES OF TRAFFIC AND OF ROAD SIGNS AND TRAFFIC SIGNALS (SLIDES 11 AND 12)

Review and Reminder

→ RULES OF TRAFFIC AND OF ROAD SIGNS AND TRAFFIC SIGNALS (QUIZ) (SLIDES 13 TO 53)

MODULE 4 : RISK BEHAVIORS

FACT SHEET

Duration : 2 hours

Summary of content

- Positive and negative aspects of risk taking
- The complexity of driving
- Factors that increase risk while driving
- Awareness of the risks while driving

Competencies

1.2	1.2.1	Judicious determination of physiological factors that increase risk
1.2	1.2.2	Judicious determination of psychological factors that increase risk
1.2	1.2.3	Judicious determination of personal factors that influence risk taking
1.2	1.2.4	Appropriate determination of distraction factors that increase risk

Activity

1. *Positive and Negative Aspects of Risk Taking*
2. *Risk Factors*

Material required

- Paper and pencil

Content

Introduction

The Road Safety Education Program has a special focus on developing awareness of the important roles played by speeding, alcohol, drugs, medications, fatigue and non-wearing of seat belts in road risk, and on understanding the conditions that are conducive to safe and responsible driving.

In Module 4, learners take a first look at the issues of risk taking and at-risk behaviour. These topics will be covered in greater depth later in the Program. Module 8 of Phase 3 covers speeding which, along with alcohol, is one of the major causes of road accidents; non-wearing of seat belts is also discussed. Module 10 of Phase 3 has the learner take a closer look at impaired driving (under the influence of alcohol, drugs and medication). Module 11, Phase 4, deals with fatigue and distractions while driving, further important factors that increase the risk of road collisions.

Module 4 aims to bring the learner to recognize the factors that increase risk while driving and their impact on road accidents. It also helps learners recognize the risks that are inherent in driving a road vehicle, with the aim of avoiding risks rather than reacting to them.

Module 4 includes two activities to allow participants to think about risk taking and consider the factors that can increase risk while driving.

This fact sheet follows the same order as the computer-assisted (PowerPoint) presentation of Module 4, At-Risk Behaviours.

→ OUTLINE OF MODULE 4, AT-RISK BEHAVIOURS (SLIDE 2)

- Activity: Risk-Taking: Positive and Negative Aspects *(*see the related activity sheet)
- Driving: A Complex Activity
- Activity: Risk Factors *(*see the related activity sheet)
- Risk-Increasing Factors
- Waking Up to Risk

→ POSITIVE AND NEGATIVE ASPECTS OF RISK-TAKING (SLIDE 5)

To encourage young people to get on board with prevention, we need to acknowledge that there are positive aspects to risk taking, but without actually condoning it—particularly in relation to driving. "If we content ourselves with denigrating risk taking, thinking to reduce it, we are more likely to accomplish the opposite and incite young people to take even more risks so that the benefit will be acknowledged".[6] [TRANSLATION]

Some of the positive aspects of risk taking:

- Quest for new challenges
- Pleasure
- Relief of stress
- Development of courage
- Peer recognition (prestige)
- Facing up to fears
- Testing limits
- Increasing self-esteem and confidence

[6] J.-P. Assailly, *Les jeunes et le risque* (Paris: Éditions Vigot, 1997).

Risk depends principally on three elements:[7]

1. Awareness of risk
    - The risk must be perceived as real. The driver must be alert to risk, to danger.
2. Assessment of abilities in specific driving situations
    - Certain young people overestimate their abilities and have the impression that they are not exposed to risk.
3. Acceptance of risk
    - This is the most important element and the most closely linked to risk, as the driver knowingly chooses to be exposed to risk.

In light of the above information, it is important to:

- Provide learners with information about at-risk behaviours, risk factors and their consequences (knowledge and awareness);
- Provide learners with feedback, in class and on the road, to help them evaluate their abilities objectively and realistically;
- Counter deliberate at-risk behaviours, in class and on the road, by bringing the influence of fellow-learners to bear.

While the pleasure of driving cannot be denied, safety must always come first.

→ DRIVING: A COMPLEX ACTIVITY (SLIDES 7 AND 8)

In terms of accident risk in general, drivers do not perceive driving as a life-threatening activity (Transportation Research Board (TRB), 1998, referenced in *Rapport de la table de concertation sur la vitesse au volant*, SAAQ, 2004[8]). Yet driving a vehicle is demanding. It demands constant attention, and the ability to see everything that is moving around us and to anticipate certain events. We require a sense of judgment and must be able to make decisions fast; more than anything, we must be able to coordinate our every move effectively. All of this requires being in full possession of our faculties.

With time and experience, we come to master the basic knowledge of driving and to hone the attendant skills.

→ RISK-INCREASING FACTORS (SLIDES 10)

→ THE DRIVER (SLIDE 12)

As many as 80% of road accidents are caused by human behaviour and could be prevented. It is thus essential, when discussing factors that can increase the risks of driving, it is therefore essential to emphasize driver limitations, rather than vehicle limitations or road conditions.

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[7] R. Shtarkshall, *An examination of the concept 'risk taking' and its applications to the contraceptive behavior of youth*, International Journal of Adolescent Medicine & Health 3: 121-134.

[8] Transportation Research Board, *Managing Speed: Review of Current Practice for Setting and Enforcing Speed Limits*, Special Report 254 (Washington D.C.: National Academy Press, 1998).

→ AGE-RELATED RISK FACTORS (SLIDES 13 TO 15)

The graphs in slides 14 and 15 show that young drivers are overrepresented in road accidents. Slide 14 illustrates the involvement of drivers of all ages in fatal accidents. When one looks at the number of drivers involved per 100 000 licence holders, it is clear that drivers 16 to 19 years old are the most frequently involved in fatal accidents (65.2 per 100,000 licence holders), followed by 20 to 24 year olds (29.9 per 100,000 licence holders). Learners should be reminded that the behaviour of young drivers often ends with the death of their passengers or the occupants of another vehicle, and not necessarily in the death of the driver.

Slide 15 indicates the number of driver deaths for every 100,000 licence holders and shows that more deaths occur among young drivers, with rates of 26.2 in the 16 to 19 age group and 13 in the 20 to 24 age group.

As a rule, a driver's behaviour behind the wheel is the reflection of his or her overall behaviour. In young people, it can be fueled by the thirst for independence, an attitude of recklessness and the search for identity, all of which leads to tests of strengths and limitations. Obviously, there are wide variations among individuals, and it goes without saying that not all young people show at-risk behaviour behind the wheel.

Biological Aspects

In young people, immaturity has been observed in the regions of the frontal lobe, which processes "thinking before acting".

The brain continues to develop after the age of 18, particularly in the regions of the frontal lobe:

- Control of emotions
- Reasoning
- Integration of information

Sensation seeking increases from the age of 14 on, peaking at around the age of 20 and dropping progressively from then on.

Psychosocial Aspects

Many young people have intense social lives, with group activities at night and over the weekend, sometimes involving alcohol or drugs.

→ DIFFERENCES BETWEEN MEN AND WOMEN (SLIDES 16 AND 17)

Young men drive more than young women and have more accidents per kilometre driven. Slide 17 shows the clear gap between young men and young women when it comes to involvement in road accidents. The death rate is consistently higher among young men aged 16 to 19 than among young women in the same age group. However, young women—particularly those between 16 and 17—are at higher risk of being killed as passengers in a vehicle.

It is widely known that, in comparison with young women, young men are more inclined to take risks and indulge in speeding; they are more vulnerable to peer pressure and overestimate their driving skills more.

Testosterone levels in young men are 20 times higher at 16 than in the years before puberty. There is a link between the level of testosterone, sensation seeking and at-risk behaviour.

Young men should be reminded that their driving behaviour can lead not only to their own death, but also to that of their passengers.

→ OTHER RISK FACTORS (SLIDES 18 AND 19)

Speeding

Speeding is a major cause of accidents in Québec. It plays a role in approximately:

260 aths (40%)
1,120 cases of serious injury (34%)
10,300 cases of minor injury (23%)

Young people aged 16 to 24 are overrepresented in these numbers.

If all drivers reduced their average speed by 5 km/h, the cases of injury and death on the road would be decreased by 15%.

Alcohol

Alcohol behind the wheel is a major cause of accidents in Québec. Annually, accidents caused by alcohol result in an average:

200 deaths (31%)
600 cases of serious injury (16%)
2,300 cases of minor injury (5%)

Young people and alcohol

It is important to act today so that young people will become responsible drivers tomorrow.

In 2007, drivers aged 16 to 24 represented only 10% of all licence holders. Yet they committed 26% of alcohol-related offences and represented 24% of drivers involved in accidents with bodily injury. In addition, 43% of drivers aged 16 to 24 who were killed in an accident had alcohol in their blood.

Drugs

The risk of being involved in a fatal accident is twice as high for a driver who has consumed cannabis than for a driver who is sober. The risk is 200 times greater if the driver uses cannabis at the same time as alcohol consumed at a rate exceeding the legal limit of 80 mg.

Non-wearing of seat belts

On average every year:

130 individuals (drivers and passengers) who die in an accident and 360 individuals who are seriously injured in an accident were not wearing their seat belt.

Young people need to be reminded of the importance of wearing their seat belts. While it was long believed that buckling up was really set in people's minds, 40% of drivers under 25 who died in an accident in 2008 were not wearing their seat belt, compared with 30% in the other age groups.

Wearing a seat belt increases the chance of surviving an accident by 50%.

Non-use of seat belts is often associated with other dangerous road behaviour (speeding, alcohol).

To recognize and avoid situations of risk, drivers must consider their ability to drive, the condition of their vehicle and environmental factors before they get behind the wheel.

MODULE 5 : EVALUATION

FACT SHEET

Duration : 2 hours

Summary of content

- Summary
- Reminder of the rules and responsibilities relative to obtaining a learner's licence
- Exam to obtain a learner's licence

Competencies

The purpose of this activity is for the learner to be able to:

1.1	1.1.1	Determination of the personal characteristics required for driving a vehicle
1.1	1.1.2	Determination of one's values, beliefs, motivations, influences and lifestyle in relation to the profile of a prospective driver
1.2	1.2.1	Determination of physiological factors that increase risk
1.2	1.2.2	Determination of psychological factors that increase risk
1.2	1.2.3	Determination of personal factors that influence risk taking
1.3	1.3.1	Respect of laws and regulations
1.3	1.3.2	Determination of the rules of courtesy
1.4	1.4.1	Determination of the principles relating to ecological, economical and safe driving (eco-driving)
1.4	1.4.2	Determination of the advantages of ecological, economical and safe driving (eco-driving)
2.1	2.1.1	Adequate identification of the technical characteristics of the vehicle used
2.1	2.1.2	Accurate evaluation of vehicle condition
2.1	2.1.3	Accurate evaluation of vehicle condition
2.1	2.1.4	Safe transportation of baggage and animals
2.1	2.1.5	Safe driving position

Activity

1. Exam to obtain a learner's licence

Material required

- Paper and pencil
- Multiple choice exam questionnaire

Content

Introduction

Module 5 aims to evaluate the learner's knowledge of road safety and driving a passenger vehicle through a multiple choices knowledge test. Learners who pass the test can obtain their learner's licence at an SAAQ service centre.

During the first hour of Module 5, the instructor goes over the concepts seen in modules 1 to 4 of Phase 1 of the program, so as to ensure that the learners have a good understanding of the concepts before taking the test.

The instructor then hands out the test forms.

This fact sheet follows the same order as the computer-assisted (PowerPoint) presentation of Module 5, Evaluation.

→ OUTLINE OF MODULE (SLIDE 2)

- A Review of the Learning Concepts – Modules 1 to 4
- Questions
- Rules and Responsibilities Relative to Obtaining a Learner's Licence
- Evaluation

→ MODULE 1: THE VEHICLE (SLIDES 5 AND 6)

Make sure the learners have a good understanding of the material in Module 1. At this stage, learners should be able to:

- Recognize the main components of a passenger vehicle
- Adopt a safe driving position
- Recognize the importance and usefulness of safety features
- Name the major principles and recognize the advantages of eco-driving

For the content, refer to the fact sheet for Module 1, The Vehicle.

→ MODULE 2: THE DRIVER (SLIDES 7 AND 8)

Review and discuss the qualities of a safe, cooperative and responsible driver.

Make sure the learners have a good understanding of the material in Module 2. At this stage, learners should be able to:

- Recognize the various norms, values, beliefs and influences that can have a positive or negative effect on driving a passenger vehicle
- Distinguish between positive and negative pressure

For the content, refer to the fact sheet for Module 2, The Driver.

→ MODULE 3: THE ENVIRONMENT (SLIDES 9 AND 10)

Make sure the learners have a good understanding of the material in Module 3. At this stage, learners should be able to:

- Recognize the appropriate behaviours to adopt in the presence of various types of road users
- Know and understand the rules of cooperative, courteous driving, as well as its advantages for the road network
- Know the various traffic rules, road signs and traffic signals

For the content, refer to the fact sheet for Module 3, The Environment.

→ MODULE 4: AT-RISK BEHAVIOURS (SLIDE 11)

For the content, refer to the fact sheet for Module 4, At-Risk Behaviours.

→ BEFORE DRIVING, I EVALUATE MY LEVEL OF RISK (SLIDES 12 TO 18)

Candidates who pass the exam in Module 5 will be able to obtain their learner's licence and hence drive on the road network as long as they are with an accompanying rider. So it is essential that learners be encouraged now to start evaluating their level of risk every time they go out on the road. They must always take the following three elements into consideration in their evaluation: themselves as drivers, their vehicle and the environment.

1 (The driver) Getting ready to drive

Driving safely requires the driver's undivided attention. When behind the wheel, drivers must be able to perceive danger quickly and make split-second decisions. Being in excellent physical and mental condition is therefore an important asset in driving a passenger vehicle.

Several factors can compromise the ability to drive: illness, stress, fatigue, alcohol, drugs and medication. If their driving ability is impaired, drivers must refrain from taking the wheel so as not to endanger their own safety or that of the other road users.

2 (The vehicle) Make sure the vehicle is in good working order

Driving safely means checking that the vehicle is in good working order before taking to the road. In addition, vehicles that are properly maintained use less gas and have lower greenhouse gas emissions.

3 (The environment) Take the other road users and road and weather conditions into account

Driving safely means planning trips or deciding not to drive in difficult road or weather conditions. In addition, drivers must constantly adapt their driving to the various elements of the road environment, but also to the other users with whom they are sharing the road.

→ TO OBTAIN YOUR LEARNER'S LICENCE (SLIDE 19)

To find the service centre nearest you, visit the SAAQ Web site (www.saaq.gouv.qc.ca) and click on "SAAQ Service Outlets" under "To Reach Us".

Before going to a service centre to get your learner's licence, you need to have passed Phase 1 of the driving course recognized by the Association québécoise du transport et des routes (AQTR).

Show two pieces of identification, including one with photo, from among the following:

1st Piece

If you were born in Québec

- the original of your birth certificate issued by the registrar of civil status (Directeur de l'état civil) after January 1, 1994 (a certificate of birth issued by a parish or by the ministère de la Justice is not accepted);
- a Canadian Passport;
- a Canadian Armed Forces identity card;
- a Certificate of Indian Status.

If you were born elsewhere

- the original of a birth certificate issued by a Canadian province or territory;
- a Canadian Citizenship Certificate with photo;
- a permanent Resident Card;
- other proof of legal presence in Canada.

2nd Piece

Your health insurance card.

Once your identity has been established, you must then:

- provide the original of the written *Consent of a Person Having Parental Authority* form, if you are under age 18;
- provide a duly completed attestation confirming that you have successfully completed Phase 1 of the driving course, which includes five theoretical modules;
- fill out the SAAQ's Declaration of Illness or Impairment form;
- show that you meet the medical requirements;
- pass the SAAQ's vision test;
- pay the required licence fees (in cash, by cheque or with a debit card [except in mobile service units]).

Your learner's licence lets you access the road network with a monitor during the driving course or with an accompanying rider outside of the driving course and acquire the practical skills necessary to drive a passenger vehicle.

To drive a vehicle outside of the driving course, you need to be accompanied by a person who has held a valid driver' licence for a passenger vehicle for at least two years and who can provide you with help and advice. A probationary licence holder cannot accompany a learner's licence holder.

Learner's Licence Restrictions

This licence, which you must use for at least 12 months, has restrictions that set you apart from other drivers. Other than the fact that you must be accompanied at all times when driving, you are also subject to the 4 demerit point penalty and the zero-alcohol rule, with its attendant penalties.

→ RULES AND RESPONSIBILITIES RELATIVE TO OBTAINING A LEARNER'S LICENCE (SLIDES 20 AND 21)

For more information on the role of accompanying riders, see Module 6, Accompanied Driving, and the *Accompanying Rider's Guide*.

→ EXAM (SLIDE 22)

The exam is multiple-choice and lasts a maximum of one hour.

Given that the purpose of the exam is to evaluate how well the learners understand the content of modules 1 to 4, they cannot refer to their manuals or notes or talk to their colleagues during the exam.

MODULE 6 : GUIDED DRIVING

FACT SHEET

Duration : 2 hours

Summary of content

- Accidents and offences among young drivers
- Inexperience and risk taking among young drivers
- Role and responsibilities of the accompanying rider
- Various aspects of accompanied driving
- Pedagogical tools and practical advice for the accompanying rider

Activity

4. The Accompanying Rider

Material required

- Paper and pencil

Content

Introduction

Module 6 aims to bring the learner and the future accompanying rider to better understand the importance of accompanied driving in the process of learning to drive. It also aims to transmit knowledge of the role and responsibilities of the accompanying rider and the conditions to put in place in order to achieve the targeted objectives of accompanied driving. In addition, the module offers pedagogical tools and practical advice to help the accompanying rider in their task.

Module 6 also takes a moment to inform the accompanying rider, and to remind the learner, of the general outline of the road safety education program: the four main competencies the learner is expected to acquire, the various stages of the course structure, and the process for evaluating theoretical and practical learning.

Throughout the module, the classroom instructor must emphasize the following points:

- Learning to handle a passenger vehicle is a matter of training but learning how to behave on the road network is a matter of education, responsibility for which is shared by various people, including the classroom instructor, the in-car instructor and the accompanying rider.
- The classroom instructor, in-car instructor and accompanying rider must act in harmony. Apart from covering the rules of traffic and of road signs and traffic signals, theoretical instruction seeks to make the learner aware of the importance of anticipating at-risk situations in order to avoid them; aware of the rules of courtesy and sharing the road; aware of the risks related to alcohol, drugs, speed, fatigue and distractions; and aware

of the need for environmentally friendly driving (eco-driving). In the context of accompanied driving, it is important to keep the learner thinking about these things and to reinforce the messages of prevention delivered in the classroom. The accompanying rider also has a duty to see that the learner respects traffic rules.

- The accompanying rider must be a role model for the learner driver. This means it is important for the accompanying riders to be consistent in what they think, say and do.
- Like the classroom instructor and the in-car instructor, the accompanying rider must emphasize not only memorization and repetition of driving tasks, but also understanding: the learner must understand why it is important to perform the tasks in a given way.
- Mistakes are part of learning to drive, but, in order to learn from them, you have to be aware of them and able to analyse them.

→ OUTLINE OF MODULE 6, ACCOMPANIED DRIVING (SLIDE 2)

- Young Drivers: Accidents and Offences
- Inexperience and Risk Taking
- Activity: The Accompanying Rider
- The Accompanying Rider
- Accompanied Driving
- Accompanying Rider's Guide

→ YOUNG DRIVERS: ACCIDENTS AND OFFENCES (SLIDES 3 AND 4)

Overrepresentation of young drivers in accidents with bodily injury

In 2008, drivers aged 16 to 24 represented 10% of licence holders, but they were involved in 23% of accidents with bodily injury.

Between 2004 and 2008:

- 207 drivers were involved in accidents with fatalities (22%);
- 990 drivers were involved in accidents with serious injuries (25%);
- 12 243 drivers were involved in accidents with minor injuries (23%).

In four years, that makes a total of 13 440 young road victims!

The situation is not improving. It has even deteriorated slightly: in 1994, young people aged 16 to 24 made up 23% of drivers involved in accidents with bodily injury while representing only 13% of all licence holders.

Another way of illustrating the overrepresentation of young people in accidents is to examine the number of drivers involved in accidents per 1000 licence holders.

Young people have the highest ratio of drivers involved in accidents with bodily injury per 1000 licence holders.

Number of Drivers Involved in Accidents with Bodily Injury per 1 000 Licence Holders of the Same Age in 2008	
Age 16-19	**35**
Age 20-24	**19**
Age 25-34	12
Age 35-44	10
Age 45-54	8
Age 55-64	7
Age 65-74	6
Age 75 or over	7

Source : SAAQ

And, on average, young drivers travel less than older drivers. So, if we used the number of kilometres travelled rather than the number of licence holders as the basis of comparison, the overrepresentation of young drivers would be even more obvious.

Regarding offences, in 2007—the latest year for which there is sufficient information—young drivers aged 16 to 24 represented 10% of licence holders but committed 18% of offences incurring demerit points.

The overrepresentation of young drivers is higher still in instances of speeding more than 45 km/h over the limit: drivers aged 16 to 24 commit 34% of such offences.

And the situation is clearer still in speeding or careless driving offences, 46% of which are committed by drivers aged 16 to 24.

The overrepresentation of young drivers in accidents is not limited to Québec. It has been observed in all industrialized countries for a very long time now.

→ INEXPERIENCE AND RISK TAKING (SLIDE 5)

Lack of experience

The experience gained in the first year of driving could on its own reduce the accident record of young drivers by 30% (Fuller, 1995, in Paquette *et al*., 1995).[9]

Inexperience is reflected in the types of accidents new drivers have. Significantly higher numbers of them are involved in single vehicle accidents due to loss of control leading to overturning or striking a fixed object (Evans, 1991; West, 1995, in Paquette *et al.*).[10]

9. PAQUETTE, G., *Profil d'apprentissage de la conduite automobile chez les jeunes du Québec*, Groupe de recherche en sécurité routière, Département d'information et de communication, Université Laval, Québec, 2003, p. 3.
10. *Ibid.*

Some of the unsafe behaviours adopted by young drivers stem from their inexperience. Compared with older men, young men tend to evaluate road situations as being less risky (Tranquel *et al*., 1990, in Paquette *et al*., 1995).[11] Also, it appears that, in estimating the speed to adopt on various types of roads, young drivers aged 18 to 24 always choose higher speeds than older drivers.

Age

It is difficult to sort out very clearly what stems from inexperience and what stems from youth, especially since certain risk factors—thrill seeking, recklessness, sense of invincibility, etc.—are closely interwoven.

Driver's sex

Men

- Offences: speed limits, red lights, alcohol.
- More offences and accidents, even if exposure to them—higher among young men than among young women—is taken into account.
- More risk taking among men in daily driving.

→ YOUNG DRIVERS' ACCIDENTS: WHERE, WHEN AND HOW? (SLIDE 6)

Where?

The average fatality rate of young men aged 16 to 24 is three times higher in rural areas than in urban areas (Touez et al., 1990).12 This situation can be explained by the fact that young drivers in rural areas have less access to public transit.

When?

Mainly at night and especially on weekends

How?

Given their lifestyle and heavy schedule—studies, extracurricular activities, part-time work and social life—young drivers have more than they can handle and cut into their sleep time in order to squeeze everything in. They are often on the road at the most critical hours for fatigue-related accidents—at night, between midnight and 6 a.m.—and travelling with same-age passengers, which increases the number of victims in the event of an accident. Their vulnerability to accidents is increased even more when they drink alcohol or use drugs.

→ THE ACCOMPANYING RIDER (SLIDE 7 TO 19)

11. *Ibid.*
12. *Ibid.*, p. 4.

→ THE ACCOMPANYING RIDER'S PREPARATION (SLIDE 9)

The average score obtained by accompanying riders on a questionnaire on traffic rules (alcohol, demerit points, etc.) (Paquette *et al.*, Université Laval) was 52%, but the figure masks significant differences: 22.5% of respondents answered all questions correctly and 5% answered none correctly.

There is no such thing as a perfect accompanying rider. The learner driver needs to get in the practice, so it is essential to get out on the road often and to help him or her as best one can. Being well prepared is often the best way to fulfil the role of an accompanying rider, despite one's own weaknesses and limitations.

→ INFLUENCE OF PARENTS (SLIDE 10)

It can be difficult for a parent to instil safe, cooperative and responsible behaviour in the learner driver if the parent himself or herself does not adopt such behaviour. Parents have to realize this. It is best to let the parent who is the better role model for the child be the accompanying rider. (Refer back as required to the information provided in Module 2, The Driver, on the influence of the parents.)

→ FEARS AND APPREHENSIONS (SLIDE 11)

[TRANSLATION] Most learner drivers are anxious, but also excited, about their first driving experiences. Accompanying riders, on the other hand, are under stress because they have only partial control of the situation. The research data show that perceptions change during the process and gradually become more positive.[13]

→ BECOMING AN ACCOMPANYING RIDER (SLIDE 12)

The gains from practice are considerably greater at the beginning of the learning process than they are later. This means that the period of accompanied driving and the learning that occurs during it have a decisive effect on the learner and his or her future as a driver.

→ IN ORDER TO BE AN ACCOMPANYING RIDER, YOU HAVE TO… (SLIDE 13)

The holder of a probationary licence is not authorized to be an accompanying rider. Also, the years during which a probationary licence is held do not count as part of the two years' experience required in order to be an accompanying rider.

→ THE ACCOMPANYING RIDER'S ROLE (SLIDE 14)

Propose to accompanying riders that they wait until the learner has completed the in-car sessions in Phase 2 of the program, dealing with basic vehicle manoeuvres, before accompanying the learner on the road for the first time. This will allow the driving monitor to introduce the rudiments of driving and lay a solid foundation for them.

13. *Ibid.*, p. 216.

→ BEFORE BECOMING AN ACCOMPANYING RIDER (SLIDE 15)

Being an accompanying rider is a commitment. Before making the commitment, the person concerned must make a judgment of his or her abilities and availability.

Do you have the time? A large number of hours (a minimum of 50, according to the OECD, 2005) have to be set aside to supervise the learner and help him or her complete the learning process.

Are you qualified? In order to be an accompanying rider, a person has to be a good driver with an excellent driving record.

Do you have a relationship of trust with the learner? Supervising a learner can be stressful. It is important to make sure the stress does not exacerbate the occasional difficulties of a relationship with a teenager.

Do you communicate well? The accompanying rider's main teaching tool will be the quality of his or her communication with the driver. The accompanying rider has to be able to explain occasionally complex ideas in simple terms.

Are you patient? From time to time, helping a learner can challenge one's ability to remain calm and concentrated.

→ THE ACCOMPANYING RIDER'S ROLE AND RESPONSIBILITIES (SLIDE 16)

→ THE ACCOMPANYING RIDER'S ROLE: COMMUNICATE AND FACILITATE (SLIDE 17)

→ THE LEARNER DRIVER'S ROLE (SLIDE 18)

→ ACCOMPANIED DRIVING (SLIDE 20 TO 25)

→ DRIVING SITUATIONS (SLIDE 20)

→ HOW MANY HOURS OF ACCOMPANIED DRIVING DOES IT TAKE? (SLIDE 21)

→ ROAD SAFETY EDUCATION PROGRAM - COMPETENCIES (SLIDE 22)

→ STAGES OF LEARNING (SLIDE 23)

→ COURSE STRUCTURE (SLIDE 24)

→ EVALUATION OF THEORETICAL AND PRACTICAL LEARNING (SLIDE 25)

Evaluation is done at several points throughout the learning process.

Evaluation of theoretical learning

At the end of Phase 1, a first evaluation of theoretical knowledge is done, at the driving school. The school administers an SAAQ written exam. Learners who pass the exam are entitled to obtain their learner's licence.

The second written exam is administered at SAAQ premises. Ten months after obtaining a learner's licence, a learner may go to an SAAQ service centre and take the knowledge test.

Evaluation of practical learning

The driving school evaluates practical learning in in-car sessions 5 and 10, as well as 15, which is a synthesis of instruction prior to the SAAQ road test. These evaluations provide the learner with a indication of his or her progress in practical learning.

Twelve months after obtaining a learner's licence, a learner who has passed the SAAQ knowledge test and obtained an attestation of successful completion of the driving course can go to an SAAQ service centre and take the road test.

→ ACCOMPANYING RIDER'S GUIDE (SLIDE 28 TO 32)

→ LEARNING THE MANOEUVRES AND BEHAVIOURS (SLIDE 28)

→ THE OEA DRIVING STRATEGY: MAIN PRINCIPLES (SLIDE 29)

OBSERVE your environment

- Look far ahead
- Increase your field of vision
- Keep your eyes moving
- Check your blind spots
- Make sure you are seen
- Maintain a safety margin
- Leave yourself a way out

EVALUATE the risks

- Detect the problems
- Anticipate the risks
- Choose the most appropriate and safest solution

ACT appropriately

- Apply the appropriate solution

(Refer back as required to the information on the factsheet devoted to the OEA strategy.)

→ INDEPENDENT DRIVING: MAIN PRINCIPLES (SLIDE 30)

More concretely, from Phase 3 onward, the learner driver will have to:

- Make driving decisions without the instructor's help;
- Use landmarks to get his or her bearings on the road network;
- Detect risks in the road environment without the instructor's help;
- Perform certain driving manoeuvres independently: turns, stops, lane changes and parking.

From Phase 4 onward, in addition to what has been learned in the previous phases, the learner will have to:

- Make driving decisions without the instructor's help;
- Drive to a destination following directions given by the instructor;
- Drive to a specific destination (e.g. city hall, municipal library) with a minimum of directions from the instructor;
- Drive back to a place (other than the driving school) that was passed by at the start of the in-car session;
- Perfect all manoeuvres independently.

Independent driving will also be judged in the new road test.

(Refer back as needed to the content of the factsheet devoted to independent driving.)

→ ENTER INTO A CONTRACT (SLIDES 32 AND 33)

MODULE 7 : OEA DRIVING STRATEGY

FACT SHEET

Duration : 2 hours

Summary of content

- The OEA Strategy
  - Observe the environment
  - Evaluate potential at risk situations
  - Act safely

Competencies

The purpose of this activity is for the learner to be able to:

2.2	2.2.1	Proper visual exploration
2.2	2.2.2	Adequate and constant communication of one's intentions
2.2	2.2.3	Adequate and constant maintenance of safety margins
3.1	3.1.3	Accurate anticipation of possible behaviours of the other users
3.1	3.1.4	Adequate and constant communication with the other users
4.4	4.4.1	Interpretation of useful clues
4.4	4.4.2	Quick evaluation of risks
4.4	4.4.3	Selection of solutions for avoiding or reducing risks
4.4	4.4.4	Actions suited to the situation

Activity

Détecting risks

Material required

- Copies of the photograph
- Pencil

Content

Introduction

Module 7 aims to help learners perfect their ability to identify, evaluate and deal with real or potential risks in the road environment by applying the OEA driving strategy (Observe-Evaluate-Act).

Studies have shown that new drivers seem to experience difficulty in quickly recognizing real or potential risks in the road environment. Poor evaluation of dangerous situations is associated with driving mistakes and thus, risk (Thiffault, 1991; Wilde, Robertson and Pleiss, 2002).[14]

This fact sheet follows the same order as the computer-assisted (PowerPoint) presentation of Module 7, The OEA Driving Strategy.

→ OUTLINE OF MODULE 7, THE OEA DRIVING STRATEGY (SLIDE 2)

- Activity: Detecting Risks
- The OEA Driving Strategy
- Simulation Exercise

→ THE OEA DRIVING STRATEGY: OBJECTIVES (SLIDE 9)

With the OEA strategy, drivers can anticipate how driving situations will unfold and can thus make proactive driving decisions (i.e. decisions made before a situation occurs). This contributes to safe, cooperative and responsible behaviour on the road.

[TRANSLATION] Anticipation is based on the ability to imagine the situation that is forming in order to actively adapt to it and not wait for it to occur. (Amalberti, 1996[15])

However, while the OEA strategy makes it possible to anticipate driving situations, events may arise that drivers cannot foresee. In such cases, drivers must make reactive decisions (i.e. decisions made in response to the situation), while assuring their safety and that of the other road users present.

Examples of unforeseen events:

- A child suddenly runs into the road (children's behaviour being unpredictable).
- Part of a poorly secured load detaches from the trailer of a large truck.
- Etc.

→ WHAT IS THE OEA DRIVING STRATEGY? (SLIDE 10)

- **Observe the road environment**: Scan your environment (know where and how to look and what to look for).
- **Evaluate potential at-risk situations**: Think of possible solutions and select the safest one.
- **Act safely**: Adopt the driving manoeuvres that are safest for you and for others.

[14] F. BELLAVANCE *et al*. (2005), *Les nouveaux conducteurs : profil, prise de risque, évaluation des compétences et tests*, p. 214.
[15] R. AMALBERTI, « La conduite de systèmes à risques », *Le travail humain*, PUF, Paris, 2001

→ OBSERVE THE ROAD ENVIRONMENT (SLIDES 11 AND 12)

On the road, drivers act in response to perceived risks. Inaccurate perceptions of risk can have serious consequences for their safety and that of other road users. Drivers must therefore glean information regularly from the road environment so as to detect both real and potential risks.

Observe the road environment using various visual exploration techniques:

- **Visually scan the environment frequently**. Keep your eyes up, facing the direction in which you are driving. Look ahead toward the horizon. Do not focus on any one point around you, but keep your eyes moving (looking left/right/left when driving in a straight line and when changing direction).
- **Check regularly in the rearview mirrors**, particularly before slowing down, stopping, changing lanes, turning at an intersection, entering traffic, exiting traffic, waiting at stops, etc.
- **Check over your shoulder (in the blind spots)** before entering or exiting traffic, changing lanes, backing up, leaving a parking spot, etc.
- **Check all around your vehicle**, i.e. in front, behind and along the sides, as well as along the side of the road.

Driving a Passenger Vehicle (DPV)

Detect the presence of other road users

Road users are likely to be found in certain places, and drivers must anticipate their presence by pinpointing such places. They must also interpret the messages of other road users.

Examples of places where road users are likely to be found:

- At intersections
- On sidewalks, at pedestrian crosswalks and on bicycle facilities
- In school zones, parks, etc.
- At bus stops
- Around driving schools (motorcycles, passenger vehicles)
- Around shopping centres, community centres, hospitals
- Construction zones
- Parked vehicles (someone may swing open a car door)
- Etc.

Examples of other users' messages:

- A pedestrian who is looking left and right along the street, even if standing on the sidewalk, probably wants to cross.
- Cyclists' signals (arm movements)
- A motorcyclist who is looking over the shoulder is probably preparing for a turn or a change of lane.
- A motorcyclist who is leaning sideways is probably preparing to turn or change lanes.
- Etc.

Detect other aspects of the road environment that may represent a risk

Examples:

- Trees or buildings obstructing the driver's field of view
- Glare from the sun, etc.
- A vehicle concealing an intersection
- Difficult weather conditions (rain, snow, freezing rain, etc.)
- Hazardous road conditions (slippery surface, damaged pavement, gravel or dirt road, etc.)

→ EVALUATE POTENTIAL AT-RISK SITUATIONS (SLIDE 13)

Having pinpointed certain aspects of the road environment, drivers must detect the real or potential risks and anticipate how driving situations will unfold (forseeing what could happen). They must find solutions that prevent or reduce the risks and choose the most appropriate solution, one that ensures road safety.

In situations involving more than one risk, drivers must decide which is the greater risk for themselves and for others and must choose appropriate actions to prevent or reduce that risk.

→ ANTICIPATE RISKS (SLIDE 14)

Evaluate rights of way

- Correctly determining who has right of way requires sound knowledge of road signs, traffic signals and traffic rules (see *Driver's Handbook*, chapters 3 and 4).

Anticipate traffic light changes

- A traffic light that has been green for some time may turn amber as your vehicle approaches the intersection.

Anticipate traffic slowdowns, stops and disturbances

- Example: It's rush hour and there are many users on the road. Slowdowns and stops are fairly inevitable. The thing to do is to slow down and maintain the safety margins all around your vehicle.

Allow sufficient time and distance for manoeuvres

- Example: It takes more time, over a longer distance, to pass a heavy vehicle than to pass a passenger vehicle (because of the length of heavy vehicles).

Anticipate stops by certain vehicles

- School buses and city buses stop frequently to take on and drop off passengers.
- Buses, minibuses and vehicles carrying hazardous materials are required to stop at least five metres from the railway tracks at level crossings. Drivers following these vehicles should expect to make frequent stops.

→ ACT SAFELY (SLIDE 15)

Depending on the situation, drivers can do several things to ensure their safety and that of other road users, particularly vulnerable users.

At-risk situations can be forestalled by allowing oneself sufficient time and space to react, and by developing the reflex of applying the OEA strategy. By driving at reasonable speeds, remembering to keep looking well ahead, and being alert and focused, new drivers should have enough time to detect potential risks, think of possible solutions and act accordingly in order to ensure their safety and that of other users.

→ MAINTAIN SAFETY MARGINS ALL AROUND YOUR VEHICLE (SLIDE 16)

The two-second rule (*Driving a Passenger Vehicle* (DPV)

At an intersection: The rear wheels of the vehicle ahead should be fully visible.

→ FRONT SAFETY MARGIN (SLIDES 17 TO 19)

To increase the front safety margin, slow down!

→ REAR SAFETY MARGIN (SLIDE 20)

Maintain the distance to the rear of your vehicle (DPV).

→ SIDE MARGINS (SLIDE 21)

Be sure to protect vulnerable users such as cyclists.

→ COMMUNICATE WITH OTHER ROAD USERS (SLIDE 22)

Communicate your presence and your intentions (DPV).

Use your signal lights

- Use signal lights exactly at the right moment—neither too early, nor too late. Otherwise, you may confuse the road users around you.
    - Signal only when there are no more intersections between you and where you want to turn or perform another manoeuvre.
    - Signal no more than 4 seconds ahead of where you will turn or perform another manoeuvre.
- Be precise: Use the correct signal light (right or left) to indicate which way you will turn.
- Always use your signal lights, whether other users are present or not.
- Turn off your signal light once the manoeuvre is completed (if your vehicle does not turn it off automatically).
- The signal light should be stopped once your vehicle is fully into position in the lane (i.e. no later than 4 seconds after completing the manoeuvre).

Use your headlights or horn

- If necessary, use your headlights or horn to alert other road users to an impending danger.

Use your brake lights

- If your vehicle is slowing down or stopping, give early alert to other road users by touching the brake pedal.

Make eye contact, if necessary

- Eye contact makes others aware of your presence.

Use a hand or head signal

- These are means to communicate your intentions or to express appreciation to another road user.

→ CONTROL YOUR VEHICLE (SPEED AND STEERING) (SLIDE 23)

→ APPLICATION OF THE OEA DRIVING STRATEGY: SIMULATION EXERCISE (SLIDE 24)

Example of a situation where the OEA strategy must be applied

Potential risks (Observe)

- Truck obstructing the driver’s view

Potential events (Evaluate)

- The truck may conceal a vehicle that is approaching from the other direction and intends to turn left
- The truck may conceal other road users (pedestrians, cyclists, a person with a mobility aid, etc.) who are crossing the intersection

What action will ensure the safety of the driver and the other road users? (Act)

- Slow down

MODULE 8 : SPEED

FACT SHEET

Duration : 2 hours

Summary of content

- Description of the Problem of Speeding
- Factors Affecting How Fast a Driver Decides to Drive
- Effects of Speed
- Non-Wearing of Seat Belts
- Misconduct and its Consequences

Competencies

The purpose of this activity is for the learner to be able to:

1.1	1.1.2	Determination of one's values, beliefs, motivations, influences and lifestyle in relation to the profile of a prospective driver
1.1	1.1.3	Recognition of one's abilities and limitations as a prospective driver
1.3	1.3.1	Respect of laws and regulations
1.3	1.3.3	Recognition of misconduct and the possible consequences of irresponsible driving at the personal, occupational, social, economic and legal levels
1.4	1.4.2	Determination of the advantages of ecological, economical and safe driving (eco-driving)
2.2	2.2.4	Constant control of the vehicle—braking, steering, acceleration, speed, etc.
2.2	2.2.5	Assessment of vehicle behaviour—laws of physics, speed, etc.
3.1	3.1.2	Special attention to vulnerable users

Activity

Speeding

Material required

- Paper and pencil

Content

Introduction

In Module 4, the learner was able to determine the factors that increase risk during driving and their consequences on the road safety record. In that module, the learner was made aware that speeding is an at-risk behaviour.

Module 8 presented here examines the issue of speeding in greater depth.

In fact, speeding—along with alcohol—is one of the principal causes of road accidents. This is a complex problem which affects safety in a variety of ways, since speed has an impact on the

frequency and severity of accidents. Also, the effects of speeding are often difficult for the driver to assess, particularly for an inexperienced driver. In this module, the learner will be familiarized with, among other things, the factors that influence how fast a driver decides to drive, the multiple effects of speeding and its consequences at the human, financial and legal levels.

This module includes an activity where participants are given an opportunity to think about speeding and come up with a few solutions to encourage people to obey the speed limit.

This fact sheet follows the same order as the computer-assisted (PowerPoint) presentation in Module 8, Speed.

→ OUTLINE OF MODULE 8, SPEED (SLIDE 2)

- Activity: *Speeding*
- Speeding and Speed Limits
- Why are Speed Limits Needed?
- Is Speeding a Problem?
- Young People and Speeding
- Deciding How Fast to Drive
- The Effects of Speed
- Non-Wearing of Seat Belts
- The Legal Consequences of Speeding
- Photo Radar

→ ACTIVITY: SPEEDING (SLIDES 4 AND 5)

→ SPEEDING AND SPEED LIMITS (SLIDES 6 AND 7)

Speeding, legally defined, is an offence under the *Highway Safety Code* (sections 299, 303.2, 328 or 329) committed when a driver exceeds the speed limit, even if by no more than 1 km/h. Although a few extra kilometres may seem insignificant, police officers are charged with the task of enforcing the law and they have the necessary tools to intercept drivers and impose penalties.

Note: The definition of excessive speeding is given later in the PowerPoint presentation.

→ WHY ARE SPEED LIMITS NEEDED? (SLIDES 8 AND 9)

The primary purpose of speed limits is to **protect the lives** of citizens. Speed limits are enforced by legal rules that entail penalties (fines, demerit points, licence suspension and vehicle seizure) when the limit is violated.

The speed limits in force were established:

- because the task of driving, while apparently simple, is in fact complex:
    - the road is a dense and complex environment that is very real, with cars, pedestrians, cyclists and heavy vehicles

  - driving requires constant adjustments, which impose numerous constraints
  - driving takes place in a context characterized by a diversity of vehicles and environments;
- to reflect the point of balance between the mobility, safety and diversity of all road users;
- to control individual speeds so as to encourage drivers to adopt a safe speed, thereby reducing the risks that drivers pose for themselves, but also for other users, particularly those who are most vulnerable;
- to reduce the differences in speed among vehicles;
- because many drivers tend to misjudge or underestimate the effects of speed on the likelihood of accidents and the severity of injuries;
- because it is difficult for drivers to become aware of the risks that travelling at a given speed in certain locations and in certain conditions (weather and road conditions, the quality of the road surface) poses for themselves and others.

Speed limits are determined on the basis of the environment in which vehicles travel under optimum driving conditions (good weather, good visibility, free-flowing traffic, etc.).

The speed limit on highways is certainly the one most often contested. Many people would like to see it raised. The problem is that raising the speed limit almost invariably leads to a higher average speed. Research has shown that a variation of 10 km/h in the speed limit leads to a variation of 2 to 4 km/h in the average speed and that every increase or decrease in the average speed, even if by only 1 km/h, raises or lowers the number of accidents by about 3% (Nilsson *et al*., 1981; Finch *et al*., 1994; Ranta and Kallberg, 1996).[16] Raising speed limits on highways would have a negative impact on road safety, since it would increase the number of accidents. By the same token, lowering the speed limit would decrease the number of accidents.

It is a myth that in Europe, Germany in particular, there are no speed limits on highways. In reality, only certain sections of the highways in Germany are without speed limits. The rest of the network is closely monitored by police, and as a result, drivers obey the speed limits.

Speed limits alone are not enough. Simply posting a speed limit does not mean that it will be obeyed. This is why there has to be a speed control mechanism to force drivers to travel at a safe speed.

→ IS SPEEDING A PROBLEM? (SLIDES 10 AND 11)

Each year there are more than 11 000 victims of speeding in Québec, which averages out to more than 30 people a day!

Speeding is the cause or the source of many accidents. In addition, speed is an aggravating factor in collisions, whatever their cause. Speeding is sometimes the cause of an accident but can also result in more severe injuries for the vehicles' occupants.

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[16]. NILSSON *et al*., 1981; FINCH *et al*., 1994; RANTA and KALLBERG, 1996; cited in "Table de concertation sur la vitesse au volant, rapport final", October 2004, p. 143 (unpublished document).

Speeding is a generalized problem. Its occurrence is frequent and widespread, and it concerns all drivers. Unfortunately, the driving public has come to trivialize speed limits, speeding and its consequences.

According to data from the Ministère des Transports and the SAAQ:

- A majority of drivers disobey the speed limits:
  - 50% of drivers speed in urban areas
  - 65% of drivers speed on secondary roads
  - 80% of drivers speed on highways
- Yet 95% of drivers feel that they themselves drive at a safe speed.

As is often the case with road safety, especially with regard to speeding, the **problem isn't me, it's other drivers**!

→ YOUNG PEOPLE AND SPEEDING (SLIDES 12 TO 15)

→ DECIDING HOW FAST TO DRIVE (SLIDE 16)

Exceeding the speed limit is a mass phenomenon, but the decision to drive at a given speed in a particular environment remains an **individual choice**. Even if drivers most of the time try to avoid the risk of having an accident, there is every reason to believe that on certain occasions drivers deliberately adopt a styleof driving that is dangerous.

Drivers make this decision based on various factors related to themselves as drivers, the road environment and, the vehicle.

The driver

Deciding how fast to drive depends largely on the driver and the type of driving behaviour he or she adopts.

- *Age and experience* – It is becoming more and more apparent that accidents involving young people are more related to deliberate risk-taking than to a lack of skill.
- *Sex* – According to surveys conducted by the SAAQ, both women and men speed. However, statistics on offences show that men tend to drive faster than women, as men are ticketed more often.
- *Intentions* – Deciding how fast to drive depends on the driver's intentions. What are the beliefs that the driver associates with such behaviour?

Examples of beliefs:

- driving fast = pleasure;
- driving fast = getting there more quickly and saving time;
- driving fast = no danger to myself or others;

I can drive fast because I'm a good driver (tendency to overestimate one's own abilities).

- The mental state of drivers may to a large degree determine what he or she considers to be an appropriate speed. People who are convinced that they can adopt a particular behaviour will do so. The opposite is also true.
- Feeling of urgency/stress – Saving time is a very strong impulse for many people. They therefore attribute a positive value to speed: it is a way to save time and a source of rewards, satisfaction, freedom, pleasure, thrills and self-esteem. But the actual time saved is often negligible, particularly when we consider the increased risk due to speeding.
- Ecodriving – The desire on the part of drivers to reduce their speed on highways and adopt a style of driving that is ecological, economical and safer.
- Length of the trip (i.e., a "long haul") – Drivers decides to drive faster to reduce the amount of time spent on the road.
- Alcohol, drugs, fatigue – If people's ability to drive is impaired, this can influence how fast they decide to drive, because they either overestimates or underestimates their own abilities.
- Carrying passengers – This can have a negative or a positive effect on speed. This factor interacts particularly with age.
- Previous travel – How you evaluate your speed at a given time depends on how fast you may have been travelling beforehand: people tend to underestimate their speed if they have just been travelling at a higher speed. For example, after exiting a highway, it is difficult to readjust your speed down to the posted limit.
- Influence of others – This influence results in adopting the same speed that other drivers are travelling at: perceived social norms (everybody's doing it, so I'll do it too), imitation, pressure, comparing your own speed with that of others.

The environment

A road user's behaviour is not unaffected by the road infrastructure, its layout or its environment. These factors demand varying degrees of vigilance on the driver's part and determine where and how the driver's attention is focused. The way people perceive the road determines how fast they will drive.

- *The speed limit* – How fast drivers travel obviously depends on the type of road they are driving on (residential street, city boulevard, secondary road, etc.) and the posted speed limit.
- *Road profile* – How fast drivers travel is also determined by the width of the road and its traffic lanes, the quality of the road surface, the pavement markings, how sharp the curves are, and whether or not there is a shoulder.
- *Monitoring/penalties* – The presence of police officers or the possibility of being caught speeding and penalized is another factor that influences how fast people drive.
- *Visibility* (sight distance) and the *time of day* (morning, evening, night, etc.) can also play a role in how fast people drive.
- *Weather conditions* – Rain, snow or fog can also influence how fast people drive, but weather conditions more particularly lead to disparities in vehicle speeds among drivers.

- *Distance from home* – It has frequently been noted that people feel safer and are less vigilant when travelling close to home. This is an illusion, since a great many speed-related accidents occur in urban areas close to home or work.
- *Traffic density/user density* – How fast people drive will probably also be influenced by driving in an area where there is a lot of interactions among various road users or where there are many vehicles parked by the roadside.

The vehicle

- *Mass* – Driving a large vehicle can give you a feeling of invulnerability. This type of vehicle is well sound-proofed. Drivers may not really be aware of how fast they are travelling.
- *The vehicle's condition* – The condition of the vehicle will determine the driver's behaviour.
- *The vehicle model* – Improvements in tires, suspension, brakes or sound-proofing in high-end vehicles may encourage faster driving.

→ THE EFFECTS OF SPEED (SLIDE 17)

How speed affects the risk of having an accident:

- In urban areas, studies have shown that the risk of being involved in an accident doubles with each increment of 5 km/h.
- In rural areas, the same type of studies have shown that the risk of an accident is:
    - doubled at 10 km/h above the speed limit;
    - almost 6 times higher at 20 km/h above the speed limit;
    - almost 18 times higher at 30 km/h above the speed limit.[17]

→ WHEN SPEED IS INCREASED (SLIDES 18 TO 20)

→ THE FIELD OF VISION IS REDUCED (SLIDE 18)

More than 90% of drivers' decisions are based on what they see. When travelling at high speed, a driver may not notice a child about to cross the street or a vehicle suddenly appearing at an intersection.

[17]. KLOEDEN *et al*., *Travelling Speed and the Risk of Crash Involvement*, 2 vol. Canberra, Federal Office of Road Safety, CR 172, 72 p. 1997; KLOEDEN *et al. Travelling Speed and the Risk of Crash Involvement on Rural Roads*, South Australia, Federal Office of Road Safety, 2001.

→ TRACTION IS REDUCED (SLIDE 19)

→ CERTAIN EMERGENCY MANOEUVRES BECOME IMPOSSIBLE (SLIDE 20)

→ STOPPING DISTANCES INCREASE (SLIDE 21)

→ STOPPING DISTANCE (SLIDES 22 TO 24)

Reaction time

This is the amount of time between the moment the driver sees an obstacle and decides to brake and the moment he or she begins to press down on the brake pedal. Average reaction time is 1.3 seconds. The faster the vehicle is moving, the greater the distance travelled during reaction time.

Braking time

During braking time, the driver presses down on the brake pedal until the vehicle comes to a stop. The higher the speed at the moment the brake is applied, the greater the distance travelled during braking time.

Other factors at the time the driver begins to brake influence stopping distance: condition of the road surface (dry, wet, snow-covered), brakes and tires wears, vehicle weight.

The increase in stopping distance is not constant. It doubles between 30 km/h and 50 km/h and triples between 50 km/h and 100 km/h. In fact, when speed doubles, the distance travelled during reaction time doubles, while braking distance quadruples.

- Stopping distance at 50 km/h (Slide 21) – After noticing an obstacle, a person driving at 50 km/h will travel 18 metres before applying the brakes and 31 metres before bringing the vehicle to a stop.
- Stopping distance at 60 km/h (Slide 22) – After noticing an obstacle, a person driving at 60 km/h will travel 21 metres before applying the brakes and 41 metres before bringing the vehicle to a stop. So during the time it takes to react (an average of 1.3 seconds), the driver travels 3.6 metres farther at 60 km/h than at 50 km/h.
- Stopping distance at 65 km/h (Slide 23) – After noticing an obstacle, a person driving at 65 km/h will travel 25 metres before applying the brakes and 46 metres before bringing the vehicle to a stop.

→ IMPACT ON A PEDESTRIAN (SLIDES 25 TO 27)

- While the driver driving at 50 km/h came to a stop in time to avoid hitting the pedestrian, the two drivers driving at higher speeds struck the pedestrian at 42 km/h and 55 km/h, respectively. This is an unavoidable physical reality. Furthermore, the accident took place under optimal conditions: dry pavement, vehicle and roadway in good condition, driver unimpaired. In less favourable conditions, the stopping distance may be even greater.
- The effects of speed on the severity of injuries to vulnerable users is much greater than for other types of users. The higher the vehicle's speed at the time of impact, the greater the probability of a pedestrian being killed. As vehicle speeds move up into the 40 km/h

to 60 km/h range, the level of risk for fatal accidents makes a sudden jump. The section on stopping distance shows the effect that "only a few extra km/h" can have on stopping distance and, as a result, on a pedestrian struck by a vehicle.

→ FORCE OF IMPACT INCREASES (SLIDE 28)

→ PROBABILITY OF DEATH FOR A VEHICLE OCCUPANT BASED ON SPEED AT IMPACT (SLIDE 28)

The probability of death is related to certain factors, including age and state of health, but it is particularly associated with the sudden deceleration caused by a collision.

→ AN ACCIDENT: THREE TYPES OF IMPACT (SLIDES 30 TO 32)

It is true that vehicles are becoming better equipped, that technologies are changing rapidly, and that vehicles are safer. Yet the fact remains that the faster a vehicle is moving, the greater the force of impact. Also, one thing that can never be changed is the human body's capacity to absorb an impact. When an accident occurs, if you are not wearing your seat belt, you can be thrown against the steering wheel, slammed into the windshield or thrown from the vehicle, and the impact will be absorbed by your bones, internal organs, skull or brain.

→ NON-WEARING OF SEAT BELTS (SLIDES 33 TO 34)

By slowing down and wearing seat belts, drivers improve their chances of escaping injury if they do have an accident.

Among drivers who were killed in road accidents and whose blood-alcohol level were tested, researchers determined that the higher the blood-alcohol level, the lower the rate of seat belt use. Also, the later at night people drive, the less likely they are to wear their seat belts. (Special study, conducted by the Direction des études et stratégies of the SAAQ, based on data compiled from accident reports and the Bureau du coroner.)

Many people mistakenly believe that if they drive at low speed or for short distances, they run no risk in not wearing their seat belts. However, more than half of all accidents occur close to home and in zones of 50 km/h or less. Hence the importance of wearing seat belts at all times.

Drivers who wear their seat belts improve their chances of surviving a collision by 50%. This includes all types of collisions. The effectiveness of seat belts varies, however, depending on the type of collision, speed, etc.

Even for passengers in the back seat of a vehicle, wearing seat belts increases the chances of survival. Some people mistakenly believe that passengers in the back seat are protected by the front seat in the event of an accident. But in an accident, depending on the point of impact, the occupants of a vehicle can be thrown in any direction.

In a front-end collision, the head is thrown forward, with the risk of striking the inside of the vehicle (windshield, steering wheel, etc.), and this is what seat belts prevent.

→ THE LEGAL CONSEQUENCES OF SPEEDING (SLIDE 35)

The offences and penalties presented in the table in Slide 35 are provided in the *Highway Safety Code*. Moreover, in cases where lives are endangered, including the driver's, reckless driving and street racing are punishable under the *Criminal Code*. Prison terms can be imposed for these types of offences.

→ EXCESSIVE SPEEDING (SLIDES 36 TO 38)

The penalties prescribed for excessive speeding are complex, and they vary depending on where the offence is committed. But the important thing to remember is that:

- any excessive speeding results in suspension of the driver's licence;
- a repeat offence can result in the vehicle being seized;
- when a person is convicted of excessive speeding, the fine and the demerit points are doubled.

The reference period in respect of excessive speeding is ten years. This means that if you commit a repeat offence within ten years following a conviction for excessive speeding, stiffer penalties will apply.

→ PHOTO RADAR (SLIDE 39)

Under this pilot project, nine photo radar devices (six stationary and three mobile) have been installed to control speeding, as well as six devices to detect drivers running red lights. (http://www.objectifsecurite.gouv.qc.ca/en/)

Road signs have been posted for all of these devices to show motorists where they are located. Thus, the system cannot be considered a trap, since drivers are warned in advance.

Photo radar is an additional tool for police officers in enforcing speed limits. The device will detect any vehicle exceeding the speed limit at any of these locations. The vehicle's owner receives a statement of offence by mail in the following days. If the owner was not driving the vehicle at the time of the offence, he or she must indicate who was behind the wheel.

Photo radar is a proven tool for promoting road safety and is used in many countries around the world. It helps to bring down traffic speeds, as well as reducing the number of accidents at accident-prone locations.

As for the red light cameras, the system is activated when a driver drives through an intersection while the traffic light is red.

MODULE 9 : SHARING THE ROAD

FACT SHEET

Duration : 2 hours

Summary of content

Activity: Improvisation on Sharing the Road

- Sharing the Road with Vulnerable Users
  - Pedestrians, cyclists, moped, scooter and motorcycle operators, and users of motorized mobility aids
- Sharing the Road with Heavy Vehicles
  - Trucks, tractor-trailers, tractor semi-trailers, road trains, intercity buses, city buses, school buses and emergency vehicles

Competencies

The purpose of this activity is for the learner to be able to:

3.1	3.1.1	Consideration of the other road users—characteristics, rights, etc.
3.1	3.1.2	Special attention to vulnerable users
3.1	3.1.3	Accurate anticipation of possible behaviours of the other users
3.1	3.1.4	Adequate and constant communication with the other users
3.2	3.2.1	Application of the rules of cooperative, courteous driving
3.2	3.2.2	Proper consideration of the actions of the other users
3.2	3.2.3	Appropriate actions in the presence of other users
3.2	3.2.4	Avoidance of potential conflicts, regardless of source
4.1	4.4.1	Interpretation of useful clues
4.4	4.4.2	Quick evaluation of risks
4.4	4.4.3	Selection of solutions for avoiding or reducing risks
4.4	4.4.4	Actions suited to the situation

Activity

Improvisation theme: Sharing the Road

Material required

- Paper, pencil, board, marker, improvisation cards, description cards, clean copies of the Checklist for Sharing the Road, optional accessories (ball, hat, bike helmet, cane, umbrella, etc.)

Content

Introduction

Early in Module 9, learners are asked to become familiar with other road users and to apply the OEA strategy (Observe–Evaluate–Act). They are also given an opportunity to consider the main characteristics of vulnerable users—users who can be unpredictable and are often involved in

road accidents. An activity enables participants to perfect their knowledge and adopt appropriate attitudes with respect to vulnerable road users.

The second part of Module 9 aims to familiarize learners with the characteristics of heavy vehicles and teach them how to share the road with that type of vehicle. According to the heavy transport industry, the behaviour of new drivers is particularly dangerous around heavy vehicles. Special attention must be given to the characteristics that are common to all heavy vehicles: their numerous blind spots, their size and weight, and the physical realities they impose. The most common heavy vehicles found in our daily lives are presented in this module, with a view to underscoring their distinctive features.

→ OUTLINE OF MODULE (SLIDE 2)

- Activity: Improvisation on Sharing the Road
- Sharing the Road with Vulnerable Users
- Sharing the Road with Heavy Vehicles

→ VULNERABLE USERS (SLIDE 8)

Drivers of road vehicles must share the road with many other users, including vulnerable users. The latter are people who have limited protection and are therefore at greater risk when they use the road network. Special attention must be paid to this category of road users, particularly children, seniors and persons with disabilities.

To share the road safely and courteously, drivers of road vehicles must:

- observe speed limits;
- yield to pedestrians crossing at a green light at an intersection where there is a stop signal or at a pedestrian crosswalk;
- avoid passing a cyclist travelling in the same lane, if they cannot do so safely in the space available;
- maintain a safe distance from the vehicle in front.

→ PEDESTRIANS (SLIDES 9 TO 14)

In Québec, the pedestrians who are the most at risk of being involved in a road accident are children and young people between the ages of 5 and 24 and seniors 65 and over.[18] The impact of an aging population will gradually make itself felt in the numbers of road victims. According to recent studies on aging and transport, pedestrian safety is the major issue affecting senior safety.

Pedestrian negligence, and inattention or distraction on the part of the driver or the pedestrian are the leading factors that contribute to accidents involving pedestrians and road vehicles.

[18]. SAAQ, *Bilan routier 2007.*

Every day in Québec, approximately 10 pedestrians are hit by a vehicle, primarily in urban areas. The number of pedestrian deaths is surpassed only by the number of people who die in cars and light trucks.

Pedestrians have no protection in an impact. They are vulnerable, and their reactions can be difficult to predict. Some pedestrians cross the street where there is no crosswalk; others suddenly emerge from between two vehicles.

Children

Particular attention must be paid to children, whose behaviour is much less predictable than that of other road users:

- Children are less aware of danger.
- Children are small and often do not see any further than the parked cars around them.
- Their peripheral vision is not as developed as that of adults.
- It is more difficult for them to judge the distance and speed of other road users.
- They do not know traffic rules, let alone the braking distances of vehicles.
- They can be unpredictable.
- For children, the ideas of “danger” and “risk” are abstractions, and they take risks without considering the consequences.

→ CYCLISTS (SLIDES 15 TO 20)

Cyclists have the same rights and responsibilities as drivers of vehicles. They, too, are vulnerable road users. Drivers need to remain attentive in their presence and follow certain safety rules:

- It is best for drivers to slow down when approaching a cyclist. They should sound their horn only if necessary to signal their presence, as the cyclist may be startled by the noise and fall.
- Before turning right at an intersection, drivers must check the right side of the road, rearview mirrors and the right blind spot, and give the right of way to any cyclists.
- Before turning left, they must give the right of way to oncoming cyclists, and visually check rearview mirrors and the left blind spot.
- Drivers must be alert to cyclists weaving in and out of traffic.
- Cars should not be driven or parked on bicycle paths, as these are reserved for cyclists.
- To avoid hitting a cyclist, drivers must check before opening the door of a car that is parked on the side of the road.
- It must be kept in mind that a cyclist using the shoulder of a secondary road may suddenly decide to move back onto the road.
- Special care is required in the evening and at night, as not all bicycles are equipped with the mandatory lights or reflectors.

Passing too close to a cyclist is a violation that carries demerit points and a fine.

→ MOPED, SCOOTER AND MOTORCYCLE OPERATORS (SLIDES 21 TO 24)

Like pedestrians and cyclists, the operators of mopeds, scooters and motorcycles are vulnerable road users. They are more likely to be injured in an accident, as they are not protected by the body of their vehicle, bumpers or a seat belt.

- Their smaller size makes mopeds, scooters and motorcycles harder to see, especially at night or in fog, bad weather and heavy traffic, and this can lead to accidents with cars.
- Again because of the size of mopeds, scooters and motorcycles, drivers find it more difficult to judge their speed or the distance between the smaller vehicle and their own.
- The fact that mopeds, scooters and motorcycles are less numerous and are seasonal road users makes it harder to notice them in the general flow of traffic.
- Just under 60% of fatal accidents involving a motorcycle and a car are caused by a manoeuvre on the part of the car driver.
- Almost 40% of fatal accidents involving a motorcycle and a car occur at an intersection, when the car driver cuts in front of the motorcyclist. Car drivers often think they have the time to make that left turn or to cross the intersection before the motorcycle gets there—or they simply do not see the other user.
- A moped, scooter or motorcycle may be hidden in a car's blind spot, or may not be seen by a driver who merely glances in that direction.
- It can be difficult to see the signal lights on mopeds, scooters and motorcycles. In addition, not all of these vehicles are equipped with automatic signal lights, so that other drivers may misread the situation when the operator forgets to switch off a signal light.
- Motorcyclists tend to ride to the left of the lane. They do this for greater visibility, and not necessarily because they intend to turn left.
- Operators of mopeds, scooters and motorcycles have the same rights and obligations as other drivers using the road. Unlike cyclists, they are entitled to take up the full width of the lane, and in fact require that amount of space for their safety.
- Certain road conditions that are minor irritants for car drivers can be infinitely more problematic for motorcyclists. Motorcyclists may have to reduce speed or change positions within the lane in response to traffic or road conditions (e.g. potholes, gravel, wet or slippery surface, railway lines, gaps in the pavement). Motorcycles can also skid in certain road conditions.
- On dry pavement, motorcycles can brake over a shorter distance than cars, as they have greater braking capability. They have surprising acceleration capability as well.
- Motorcyclists travelling in groups of two or more must ride in a staggered (zigzag) formation for increased safety. (If the group is really large, it is recommended that subgroups of not more than five be formed.)

Car drivers must therefore watch out for moped, scooter and motorcycle operators, communicate with them and give them road space. More specifically, they must:

- Be aware that there will be mopeds, scooters and motorcycles on the road. They must look for them when doing a visual search and take them into account in driving. These habits need to be relearned every spring.

- Always signal their intentions before beginning any manoeuvre. Motorcyclists can then adjust to the traffic and find a safe position in the lane.
- Before changing lanes, check their rearview mirrors and blind spots to see if a moped, scooter or motorcycle is approaching.
- Be particularly careful before beginning any manoeuvre at an intersection and before making a left turn.
- Take into account the fact that a motorcycle's smaller size may make them miscalculate its speed and its distance from their own vehicle.
- If possible, make eye contact with the operator of a moped, scooter or motorcycle.
- Learn how to read the movements of mopeds, scooters and motorcycles.
- Not presume that a moped, scooter or motorcycle travelling in the left lane will actually turn left.
- Be ready to anticipate the reactions of mopeds, scooters and motorcycles.
- Respect the fact that, unlike bicycles, mopeds, scooters and motorcycles are entitled to take up the full width of the lane, and need it for their safety.
- When passing a moped, scooter or motorcycle, make sure not to cross over into the other vehicle's lane. Leave plenty of space and then re-enter the right lane further ahead.
- Not pull into the same lane as and alongside a moped, scooter or motorcycle that is about to make a turn.
- Keep a safe distance between their vehicle and any moped, scooter or motorcycle ahead of them. The distance should be longer than that kept between two cars (three or four seconds, as opposed to two).
- Not break into a staggered formation of motorcyclists.

Characteristics of Motorcycles and Motorcyclists	**Do's and Don'ts for Car Drivers**
Provide meagre protection for the operator and passenger	Be aware that there will be motorcycles on the road. Look for them when doing a visual search and take them into account in driving. Always signal intentions before beginning any manoeuvre.
Less visible to other road users	Be aware that there will be motorcycles on the road. Look for them when doing a visual search and take them into account in driving. Always signal intentions before beginning any manoeuvre.
Seasonal road users, fewer in number	Be aware that there will be motorcycles on the road. Look for them when doing a visual search and take them into account in driving.

Characteristics of Motorcycles and Motorcyclists	Do's and Don'ts for Car Drivers
	Relearn these habits every spring. Always signal intentions before beginning any manoeuvre.
Same rights and obligations as car drivers	Allow motorcycles the full lane width to which they are entitled. When passing, make sure not to cross over into a motorcycle's lane. Re-enter the right lane further ahead. Do not pull into the same lane as and alongside a motorcycle that is about to make a turn.
Difficult to judge actual speed and intervening distance	Take into account the fact that a motorcycle's smaller size may make them miscalculate its speed and its distance from their vehicle.
Often involved in accidents at intersections and where car drivers make a left turn	Be particularly careful before beginning any manoeuvre at an intersection and before making a left turn. If possible, make eye contact with the motorcyclist. Take into account the fact that a motorcycle's smaller size may make them miscalculate its speed and its distance from their vehicle.
Motorcyclist's intentions and signals harder to see	Learn how to read the movements of motorcycles.
Often drive on the left side of the lane	Learn how to read the movements of motorcycles. Do not presume that a motorcycle travelling in the left lane will actually turn left.
Greater acceleration capability compared with a car's	Be ready to anticipate the motorcyclist's reactions.
Greater braking capability compared with a car's	Be ready to anticipate the motorcyclist's reactions.

Characteristics of Motorcycles and Motorcyclists	Do's and Don'ts for Car Drivers
	Keep a safe distance between their vehicle and any motorcycle ahead.
Less visible in a car's blind spots	Before changing lanes, check their rearview mirrors and blind spots to see if a motorcycle is approaching.
More affected by poor road conditions or weather	Be ready to anticipate the motorcyclist's reactions. Keep a safe distance between their vehicle and any motorcycle ahead.
Staggered formation used by groups of motorcyclists	Do not break into a staggered formation of motorcyclists.

→ MOTORIZED MOBILITY AIDS (MMAS) (SLIDES 25 AND 26)

In 2001, one Canadian in eight was 65 or older. By 2026, one Canadian in five will have reached age 65. This means that the "number of persons with a disability will also increase, given the higher incidence of disabilities among the elderly. These trends will increase the number of elderly persons who will be unable to drive and who will therefore require alternatives to the personal vehicle for transportation".[19] We can therefore anticipate that motorized personal transportation devices (MPTDs) will increasingly be used on the roads.

Characteristics

- MPTDs (motorized personal transportation devices):
  - Single rider, standing or seated; run on electricity; equipped with a platform, handlebars or steering wheel, and 2 wheels or 4; width less than 80 cm, maximum net weight less than 45 kg; speed 15 km/h to 32 km/h
- MMAs (motorized mobility aids):
  - Include electric wheelchairs, and three- and four-wheeled scooters
  - Used only by individuals with limited mobility

Factors affecting safety

- Several factors can impact on the safety of MMAA or MPTD riders or the safety of other road users (drivers, cyclists, pedestrians, etc.):
  - Reckless rider behaviour
  - Rider health problems

[19] *Transports Canada, Canada's aging population: Transportation safety and security*

- Physical or mental disability of the rider
- Use of medications, non-prescription drugs and alcohol
- Non-standard use or unauthorized modifications
- Breakdowns caused by mechanical failure or dead battery
- No road assistance system
- Seated riders less visible from a vehicle
- Not clearly visible at night (do not always have front or rear lights or a flag)
- Fairly quiet, and therefore not heard when approaching
- Etc.

→ DIFFERENT TYPES OF HEAVY VEHICLES (SLIDE 28)

All road users must be aware of the various types of vehicles they will encounter, as they will find themselves in certain situations requiring cooperation and anticipation of potential danger.

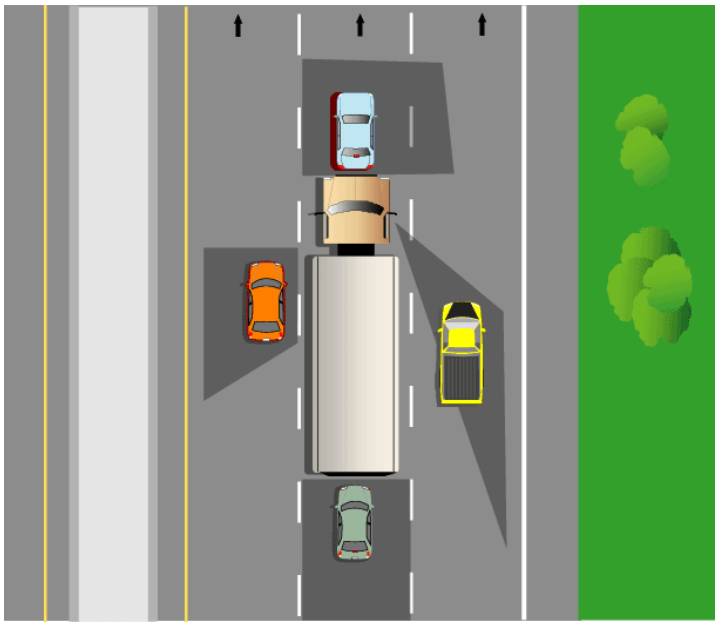
The following heavy vehicles are found on the road (the list is not exhaustive):

- trucks
- tractor-trailers
- tractor semi-trailers
- road trains
- intercity buses (long haul)
- city buses
- school buses
- snowploughs/sanders
- public works vehicles
- tow trucks
- outsized vehicles
- vehicles transporting outsized loads
- emergency vehicles

→ BLIND SPOTS (SLIDE 29)

Heavy vehicles have several blind spots, i.e. zones in the road that the driver cannot see because of the vehicle's length and height. Other road users travelling in these zones are invisible to the truck driver, so that the risk of a collision is high.

The zones are in front, at the rear, to the left and to the right of heavy vehicles, as shown below.



In front of the vehicle

When passing a truck—always on the left—drivers must accelerate so as to get into the truck driver's field of vision as quickly as possible. They should not move back into the right lane until they can see all of the truck in their inside rearview mirror.

To the rear of the vehicle

If a driver cannot see either of the outside rearview mirrors on the truck just ahead, he or she is too close and is not visible to the truck driver. A collision can occur if the truck driver suddenly brakes or slows down.

To either side of the vehicle

When cars drive alongside a truck, they may not be visible to the truck driver, and may be in danger if the driver changes direction. Depending on the situation, the car must either speed up or slow down until the truck driver can see it, i.e. when the car driver can see the truck driver's face in the truck's outside rearview mirror.

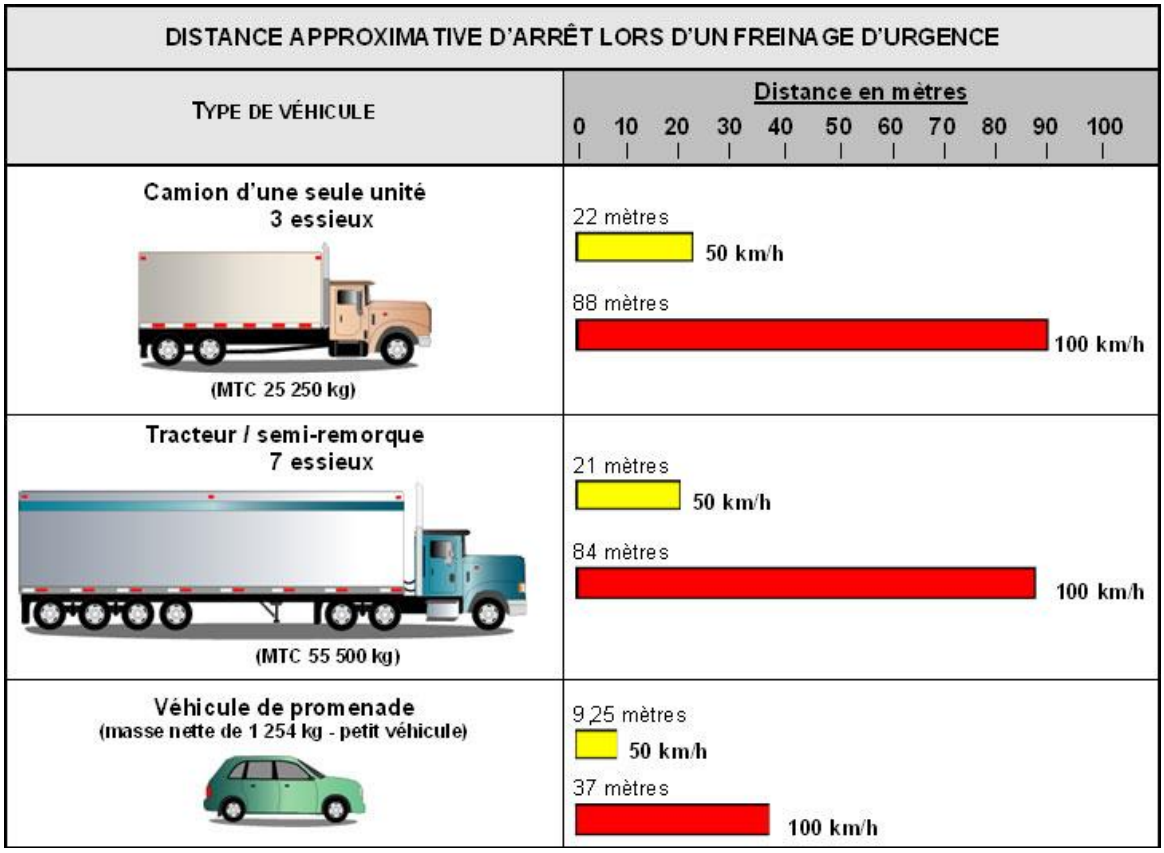
→ SIZE AND WEIGHT (SLIDE 30)

Because of their considerable weight, heavy vehicles are slower to react and require more time to brake than other vehicles. Other drivers must therefore reduce their speed and maintain a greater distance from the larger vehicle. Following a heavy vehicle too closely obstructs the view of the road ahead, possibly preventing drivers from seeing a traffic sign, traffic light or unexpected situation in time.

It requires a great deal of force to counter the inertia accumulated by a moving vehicle and to stop the vehicle. Conversely, it takes a great deal of force to overcome gravity and friction and get a standing vehicle into motion. This means that heavy vehicles move away very slowly after stopping at stop signs, traffic lights and intersections. Once they are up to speed, however, they are as fast as any other vehicle.

Different heavy vehicles have different engines and load capacities, but the size and weight of all heavy vehicles determine how they are driven. Manoeuvring a heavy vehicle requires more room and more time, and demands great precision on the part of the driver.

→ BRAKING DISTANCE (SLIDE 31)



Sources: SAAQ (Service de l'ingénierie des véhicules) and MTQ (Normalisation technique).

- All of these vehicles are equipped with an anti-lock braking system (ABS).
- The 10-wheeled vehicle has longer braking distances than the tractor semi-trailer because of slightly different breaking power, among other things.
- Transport Canada has established brake system efficiency standards based on the nominal gross weight of road vehicles and the type of brake system with which they are equipped (hydraulic or air). This explains why the two heavy vehicles above have similar braking distances despite their different weights.

- On average, the emergency stopping distance of a fully loaded heavy vehicle is twice that of a light vehicle, at an initial speed of 50 km/h on dry or wet pavement.

→ FLYING ROAD DEBRIS AND ENVIRONMENT ELEMENTS (SLIDE 32)

In addition to having extensive blind spots, heavy vehicles can impose other problems on drivers who follow too closely. Truck tires can throw up stones at high speed, cracking windshields or causing flat tires on light vehicles. In winter, ice can fly off the roof of trailers that have not been completely cleared. Vigilance is necessary at all times around heavy vehicles.

Drivers of smaller vehicles must remember that there is air turbulence in the vicinity of heavy vehicles and must be ready to correct their course when passing alongside. Turbulence is particularly evident in rain or snow, as fluids (raindrops and snowflakes) are swept upwards and splash onto windshields, thereby reducing visibility. A good trick is to turn on windshield wipers before passing a heavy vehicle.

→ SCHOOL BUSES (SLIDES 34 AND 35)

Obligation in the vicinity of school buses

Drivers must be ready to stop in the proximity of school buses.

School buses make frequent stops to take on and drop off school children. To avoid making other vehicles suddenly slow down or stop, school bus drivers must warn other drivers that they are about to stop. They do this using a mandatory pre-stop signal.

Other drivers must be aware of the following two stages:

- Prepare to stop when the amber lights or red hazard lights on a school bus are activated.
- Come to a full stop when the red lights are flashing or the stop arm is extended on a school bus.

Road vehicles must stop at least five metres from a vehicle used to transport school children when its red lights are flashing or its stop arm is extended. Once the red lights have been turned off and the stop arm retracted, they can pass or cross the vehicle provided it is safe to do so.

Passing a school bus when the red lights are flashing earns 9 demerit points and a fine of between $274 and $438.

Drivers of road vehicles must carefully observe school bus signals, anticipate the presence of children in proximity to school buses, and obey traffic rules, road signs and traffic signals.

The *Checklist for Sharing the Road with Other Users* introduces the principles of the OEA strategy that drivers must apply in the presence of school buses.

School buses at level crossings

School buses are required to stop at least five metres from the railway tracks at level crossings. They may continue only when they are certain they can cross safely.

→ CITY BUSES (SLIDES 36 AND 37)

Obligation in the vicinity of city buses

City buses are part of everyday life in our society. On public roads where the maximum speed allowed is less than 70 km/h, drivers must yield the right of way to a bus whose driver wishes to re-enter the lane occupied before stopping. The bus driver must check that the manoeuvre can be done safely and signal his or her intention.

Drivers must be particularly vigilant when a bus stops near their vehicle, as passengers may board or get off the bus, and pedestrians may cross in front of their vehicle.

Failing to yield the right of way when a bus driver signals the intention to re-enter the lane occupied before stopping earns a fine of between $100 and $200.

City buses at level crossings

City buses are required to stop at least five metres from the railway tracks at level crossings. They may continue only when they are certain they can cross safely.

→ TRACTOR SEMI-TRAILERS (SLIDE 38)

Tractor semi-trailers, which are the combination of a road tractor and one or more trailers, are used to transport goods. The trailer is attached to the back of the tractor by means of a fifth wheel, in such a way that the tractor bears a substantial portion of the trailer's weight and load. An uncoupled trailer rests on the ground by means of its landing legs.

Given the size and weight of this kind of vehicle, safe, responsible and courteous driving means watching for signals that drivers of "semis" sometimes use to communicate with other road users.

Signals

As a rule, use of emergency lights indicates that a tractor semi-trailer is about to stop, as in the following situations:

- The vehicle is stopping for a break.
- The driver is looking for a street or a customer's address and needs to stop for information.
- The vehicle has a sudden problem. The driver has no choice of where to stop and turns on the emergency lights to alert other drivers.
- The truck is carrying dangerous substances and must stop for a level crossing.
- The truck is about to back up.
- Etc.

→ SIGNS (SLIDE 39)

Dangerous substances

- Vehicles transporting dangerous substances must be identified by diamond-shaped signs attached to the tractor or the trailer(s). These vehicles are required to stop at all level crossings.

Road trains

- Road trains are identified by one of two rectangular signs.

Drivers must anticipate that, owing to the combined weight of the trailers, these vehicles will be especially slow. Their weight also explains why it takes a VERY long time to stop a road train, while their length explains why it takes more time to pass them—facts to keep in mind.

Outsized vehicles

These special vehicles include cranes and any other equipment whose length, width or height exceeds the allowed dimension. Despite being extremely slow, they are obliged to use the road network to get around and represent a certain level of danger. Sometimes, regular sized vehicles are used to transport outsized loads.

All outsized vehicles must be identified with the appropriate signs.

- Flags indicate exceptional length or width.
- A red light may be installed at the rear of the vehicle.
- A sign with a "D" may be attached to the front bumper.
- Yellow lights may be placed on the top and at the rear of the vehicle (or both).

An extra wide vehicle may require a very wide berth, while particular attention is needed not to hit overly long ones, and very high ones may not clear certain obstacles (such as overpasses).

→ EMERGENCY VEHICLES (SLIDES 40 AND 41)

Emergency vehicles include police and fire department vehicles, ambulances and public services emergency vehicles.

Special attention must be paid to:

- flashing lights
- sirens

Drivers must allow unhindered passage for emergency vehicles with their lights flashing or siren in operation. This means reducing speed, keeping as far to the right as possible and stopping, if necessary. It is very important to stay calm and to provide a free lane for emergency vehicles to pass, whether they are coming from behind or the opposite direction. Emergency vehicles have the right of way at intersections, even against an amber or a red light.

MODULE 10 : ALCOHOL AND DRUGS

FACT SHEET

Duration: 2 hours

Summary of content

- Alternative Solutions to Impaired Driving
- What Happens to Alcohol in the Body
- Effects of Alcohol and Drugs on Driving
- Personal, Social, Financial and Legal Consequences of Driving While Impaired by Alcohol and Drug

Competencies

The purpose of this activity is for the learner to be able to:

1.2	1.2.2	Judicious determination of physiological factors that increase the risk
1.3	1.3.1	Respect of laws and regulations
1.3	1.3.3	Recognition of misconduct and the possible consequences of irresponsible driving at the personal, occupational, social, economic and legal levels
4.1	4.1.2	Consideration of the physiological factors that can compromise driving ability — alcohol, drugs, medications, fatigue, drowsiness, one's state of health or a combination of several factors
4.1	4.1.6	Suitable planning of transportation options
4.3	4.3.1	Consideration of factors that influence one's ability to drive
4.3	4.3.8	Appropriate actions that make responsible driving possible

Activity

- Consequences for the Driver and for Others

Material required

- Paper and Pencil

Content

Introduction

This module is aimed at informing participants about, and increasing their awareness of, the factors that can affect their intellectual and physical faculties, and thereby impair their performance when driving. Module 10 focuses on alcohol, drugs and medication, which are substances that can alter the ability to drive. Themes concerning fatigue and drowsiness when driving will be discussed later in the program, in Module 11.

Module 10 also covers the physical, psychological, financial, social, family and legal consequences of driving under the influence of alcohol and drugs.

An activity is suggested for participants that will help them reflect on the responsible strategies to adopt regarding drinking, drugs and driving.

→ OUTLINE OF MODULE (SLIDE 2)

- Activity: Consequences for the Driver and for Others
- Impaired? Don't Drive!
- What Happens to Alcohol in the Body
- Effects of Alcohol and Drugs on Driving
- Alcohol, Drugs and the Road Safety Record
- Legal, Financial, Social and Family Consequences

The content of the fact sheet follows the same order as the computer-assisted presentation of Module 10, Alcohol and Drugs.

→ ACTIVITY: CONSEQUENCES FOR THE DRIVER AND FOR OTHERS (SLIDE 4)

→ RESPONSIBLE STRATEGIES (SLIDE 5)

→ DRIVING = A COMPLEX TASK (SLIDE 6)

Bear in mind (see Module 4, At-Risk Behaviours) that driving is a complex task that requires sustained attention. Even experienced drivers who know their route well find driving a vehicle to be a demanding activity. When drivers take their vehicles, they expose themselves to a risk of collision, and certain factors can increase the risk.

→ "IMPAIRED? DON'T DRIVE!" (SLIDE 7)

The main elements that cause impairment of the intellectual and physical faculties required to drive are alcohol, drugs, medication, mental state, fatigue, health problems and distractions.

Impaired driving implies a greater risk of collision that can cause injuries or death, and have consequences of various types (legal, financial, social, physical or psychological).

Although they cannot be the reason for an arrest, mental state (stress, emotions, etc.), fatigue and state of health can impair the faculties of a driver and increase the risk of accidents.

All drivers are subject to fatigue, drowsiness and falling asleep at the wheel, but the problem particularly affects young drivers. A number of factors are involved in their fatigue. Lifestyle, particularly studies, extracurricular activities, part-time work and social life overwhelm them and encroach on their sleep so that they can get everything done. They are often on the road at the most critical time for fatigue-related accidents, i.e. at night, between midnight and 6 a.m. Their vulnerability to accidents is even greater if they drink alcohol or use other drugs.

The state of health of drivers can jeopardize their driving performance. For example, certain diseases such as poorly controlled diabetes, a vision problem, an injury and the medication it requires can cause impairment of faculties to the point of constituting an additional risk on the

road. Even if the effects vary widely depending on the circumstances, it is important for drivers to be aware of them and to make a responsible decision about their ability to drive. Note that licence holders must each make a declaration about their health, for their safety and that of the public. That can be done when the driver's licence is renewed or at any time within 30 days of a change in the driver's state of health.

Alcohol, drugs and medication can seriously impair a driver's faculties and, in addition to increasing accident risk, a driver under the influence of those substances is committing a criminal offence. A combination of alcohol and drugs is particularly dangerous and increases the risk of an accident exponentially.

→ WHAT HAPPENS TO ALCOHOL IN THE BODY (SLIDES 8 TO 10)

→ ABSORPTION OF ALCOHOL (SLIDE 8)

The amount a person drinks

Spirits, wine and beer do not have the same alcohol content. Most beer contains 5% alcohol, while wine has about 12% and spirits, 40%. So a person might think that drinking a beer rather than another alcoholic beverage will have less impact on his or her behaviour. But according to the standard measurements for each type of drink, a regular beer is equal to a glass of wine, aperitif or spirits.

It is not so much the alcohol content that is important but the number of glasses consumed, whether it be spirits, wine or beer.

Equivalent alcohol content

One drink =

- 341 ml (12 oz) of beer with 5% alcohol content
- 142 ml (5 oz) of table wine with 7% to 14% alcohol content
- 43 ml (1.5 oz) of spirits with 40% alcohol content

Cooler-type drinks (malt-, wine- or spirits-based) are not always as light as they seem. Their effects can be surprising! For example, 50 ml of alcohol in a mix of exotic fruit juice is still 50 ml of alcohol!

How fast a person drinks

Downing a drink in one fell swoop will have more effect than slowly sipping a beer! Rapid ingestion of alcohol accelerates its entry into the bloodstream. The faster alcohol enters the bloodstream, the faster the level of alcohol in the bloodstream increases and the drunker a person becomes.

Whether a person has eaten

When the stomach is empty, there is no obstacle to the absorption of alcohol and the effects are more rapid. Eating after drinking has no effect. Alcohol is already in the bloodstream and it is too late. The absorption process is longer and alcohol enters the bloodstream more slowly when a person drinks while eating. However, eating does not prevent the intoxication process; it only slows it down.

Certain biological particularities

Certain diseases, including those affecting the liver, can amplify the effects of alcohol.

Psychological state

A driver's psychological state can increase the effects of alcohol. A person who is under stress, sad or tired may feel drunker after having a few drinks.

→ ALCOHOL DISTRIBUTION (SLIDE 9)

Once absorbed, alcohol is distributed throughout the body through the bloodstream. Alcohol is then in the blood and impairs the person's intellectual and physical faculties.

Alcohol is more soluble in water than in fat. The concentration of alcohol in the blood depends above all on the quantity of water in the body. The volume of blood in the human body varies from person to person. Heavier people have more water in their bodies and therefore a lower blood alcohol level for the same quantity of alcohol. In addition, fatty tissue is less irrigated by the blood. At the same weight, an obese person has a lower volume of blood than a muscular person and will therefore be more affected by the same quantity of alcohol.

At the same weight and the same amount of alcohol, women generally have a higher blood alcohol level than men. By nature, women have a lower volume of blood (women are, in general, smaller than men) and a higher proportion of fatty tissue. Hence, if they drink the same amount, they have a higher concentration of alcohol in the blood than men.

Young people do not tolerate alcohol as well as older people and are less aware of its effects.

Can the blood alcohol level be measured effectively with publicly available breath tests?

There are various instruments on the market to measure blood alcohol levels: wall-mounted breath tests, portable breath tests, Alcotest tubes and paper strips. These tools enable consumers to measure their blood alcohol level. They do not, however, guarantee that the person will be able to drive safely. Bear in mind that the ability to drive can be impaired by alcohol when the blood alcohol level is below 0.08 or even 0.05. Furthermore, drugs, certain medications, and stress and fatigue are some of the factors that can alter the ability to drive and even amplify the effects of alcohol without directly affecting the blood alcohol level.

There is a chart for evaluating blood alcohol levels according to weight and alcohol consumption. But keep in mind that the data do not take into consideration all factors affecting blood alcohol levels. No chart or tool can tell a person if his or her ability to drive is impaired. Besides, the level of tolerance to alcohol and its effects may vary considerably from one individual to another depending on the individual's physical or psychological state. Moreover, an average of 60 minutes elapses after the last drink before the blood alcohol level reaches its highest level. That means the blood alcohol level of a driver when starting to drive or during the trip does not always correspond to the blood alcohol level measured earlier.

→ ELIMINATION OF ALCOHOL (SLIDE 10)

Alcohol is eliminated from the body by the liver for the most part (90%). The liver is an organ working at a specific rate that cannot be accelerated. It is therefore of no use to dance, or drink coffee, energy drinks or anything else, since the liver will not do its work more quickly. Only time is effective. The rate of alcohol elimination by the liver is approximately 15 mg an hour. That is the average speed; elimination can vary from person to person and depending on the person's state of health. Alcohol is eliminated more slowly than it is absorbed. The rate of 15 mg an hour for the elimination of alcohol corresponds to about one drink an hour.

→ EFFECTS OF ALCOHOL ON DRIVING (SLIDES 11 TO 14)

Alcohol is a depressant (not a stimulant) that acts rapidly on the central nervous system and affects all senses and movements. It also reduces tension and inhibitions (its euphoric effect). The effects of alcohol begin with the first drink and gradually impact on vision, concentration, vigilance, drowsiness, coordination, divided attention and reaction time.

Furthermore, the effect may be very different for two people with the same blood alcohol level. When drivers want to know the state of their faculties in order to drive, they must also consider their personal tolerance to alcohol, their fatigue, their mental state and so on. Just the fact that the question "Am I able to drive?" is asked is often indicative that the answer is no.

Having energy drinks along with alcohol is a detrimental practice, as people think that the drinks reduce the effect of alcohol, when they are actually stimulants. Alcohol remains in the blood and still impairs the driver's faculties.

→ REACTION TIME (SLIDE 14)

→ IMPAIRED DRIVING AND THE ROAD SAFETY RECORD (SLIDES 15 AND 16)

With a blood alcohol level of 0.05, a driver has at least twice the risk of having a fatal accident than someone who is sober. Some studies indicate a higher risk. For example, a SAAQ study (2004) showed that the risk of a fatal accident when the blood alcohol level is between 0.051 and 0.080 is 4.5 times higher.[20]

[20] M. BRAULT, J. BOUCHARD, et al. *Le rôle de l'alcool et des autres drogues dans les accidents mortels de la route au Québec : Résultats finaux*, SAAQ, 2004.

Young people are more vulnerable than older people in terms of their reaction to alcohol, particularly because they are not used to drinking. In addition, their lack of driving experience and greater risk-taking expose them more to fatal road accidents.

→ EFFECTS OF DRUGS ON DRIVING (SLIDES 17 TO 20)

The effects of drugs on driving vary greatly depending on the type of drug consumed, the individual who consumes it and the context in which it is consumed. It is important to destroy the myth that certain drugs improve driving ability. The risk of being involved in a fatal accident after using cannabis, cocaine or benzodiazepines (tranquillizers) is two to five times higher than for a sober driver.

Depending on the type of drug used, the effects on driving a road vehicle may range from drowsiness (a tranquillizing effect) to high-risk behaviour such as excessive speed and aggressiveness when driving (cocaine and ecstasy).

The Effects of Drugs on Driving a Vehicle	
Type of drug	**Effects on driving**
Tranquillizers and sleeping pills Barbiturates Benzodiazepines GHB (date-rape drug)	• Drowsiness • Dizziness • Loss of peripheral vision • Increased reaction time • Loss of consciousness
Opiates Morphine Heroin Methadone	• Reduction in physical and mental capacities required for driving • Slow driving • Loss of coordination • Loss of vehicle control • Increased reaction time • Drowsiness • Vision problems
Solvents Glue Aerosols (*poppers*)	• Diminished psychomotor and cognitive skills • Decrease in visual perception • Inability to cvoncentrate • Slower movements • Increased reaction time
Cocaine, amphetamine *Speed* Methamphétamine *Crystal meth* MDMA (ecstasy)	• High-risk behaviour such as speeding, cutting other vehicles off, aggressiveness • Over confidence • Drowsiness, depressive mood, lack of attention (after the euphoric) • Loss of coordination • Dilation of pupils, which results in diminished ability to adapt to glare
Cannabis Haschich Oil Marijuana	• Difficulty concentrating and remaining attentive to the road environment • Poorer ability to interpret surrounding • Loss of coordination • Difficulty Keeping a vehicle on a straight path

The Effects of Drugs on Driving a Vehicle	
Type of drug	**Effects on driving**
	• Difficulty maintaning a constant speed and estimating distances • Increased reaction time, slower reflexes and hesitant driving • Risk of not being able to cope with the unexpected
Hallucinogens LSD Mescaline Magic mushrooms Ketamine	• Hallucinations • Problems with coordination • Loss of a sense of reality • Blurred vision • Considerable decrease in psychomotor and cognitive skills

Sources : Mohamed BEN AMAR, « Cannabis : Pharmacologie du cannabis et synthèse des analyses des principaux comités d'experts », *Drogues, santé et société*, volume 2, numéro 2, 2004.
NHTSA, *Drugs and Human Performance Fact Sheets*, 2004.
SFA/ISPA, *Alcool, drogues illégales, médicaments et circulation routière*, 2004.

→ CANNABIS (SLIDE 18)

Cannabis is by far the most commonly used illegal substance in Québec and Canada. Cannabis is also the drug most widely used by young people.

A number of factors contribute to the fact that the risks associated with driving under the influence of cannabis are often underestimated.

First of all, drivers under the influence of cannabis are usually more aware that they are intoxicated than drivers whose capacity to drive is impaired by alcohol. They are therefore less prone to adopting at-risk behaviour (speeding, passing, tailing other vehicles and so on). Since they are not as reckless, it is more difficult for them to realize the actual effect of the cannabis on their driving. Besides that, the lack of public awareness of that reality contributes to the fact that people have difficulty perceiving the risks involved. Lastly, bear in mind that the product has been trivialized to a certain extent, considering the rate of use observed, which is ever-increasing.

Many believe that cannabis helps them drive by reducing driving-related stress. However, the drug adversely affects concentration, perception of the road environment, coordination, the capacity to keep the vehicle on a straight path and to estimate distances, and reaction time, which is increased. Driving under the influence of cannabis therefore greatly increases the risk of an accident because the driver is not able to cope with the unexpected.

The safe threshold for illegal drug use cannot be determined because the content of psychoactive ingredients (for example, THC) varies. Moreover, the effect of a drug depends not only on the type of product used (quantity, quality, etc.), but also on the interaction of a number of factors such as the characteristics of the individual (sex, weight, height, state of health, state of mind, etc.) and the context of use (place, time of day, relations with others, etc.).

It is false that police officers cannot detect when a driver is under the influence of drugs. Since 2008, police officers have had the right to demand that drivers undergo physical coordination tests or an evaluation by a drug recognition expert, just as they can demand that the driver undergo a breath test.

→ EFFECTS OF MEDICATION ON DRIVING (SLIDE 19)

Certain medications can impair the ability to drive by causing vigilance, attention, vision, behavior or balance problems.

Classes de médicaments pouvant altérer la capacité de conduire	
Neuroleptics	Anxiolytics
Hypnotics and sedatives	Antidepressants
Analgesics	Antiepileptics
Anti-Parkinson's medications	Anesthetics
Diabetes medications	Systemic antihistamines
Cold and cough medications	Antiemetics and antinauseants
Opthalmological medications	

Some medications can impair the ability to drive even though they are sold over the counter. It is therefore important to ask a health professional (physician or pharmacist) about the effects of the medications on the ability to drive. In addition, the indications on the medication containers should always be carefully read, whether the medications are prescribed or sold over the counter.

→ CRIMINAL CODE (SLIDE 21)

→ SECTION 253 OF THE CRIMINAL CODE

The Criminal Code (section 253) provides for penalties for driving or having the care or control of a motor vehicle (automobile, motorcycle, moped, scooter or snowmobile), vessel, aircraft or railway equipment in the following cases:

- when the person's ability to operate the vehicle is impaired by alcohol or a drug (253(a))
- when the person has consumed alcohol in such a quantity that the concentration in the person's blood exceeds 80 milligrams of alcohol in 100 millilitres of blood (0.08) (253(b)).

This section deals with the grounds for arrest pursuant to the Criminal Code, namely, alcohol and drugs (including medication).

According to section 253(a), drivers can be charged even if their blood alcohol level does not exceed 80 mg/100 ml. If a police officer observes behaviour that implies an impaired ability to drive, the officer can subject the driver to an approved screening device or give physical coordination tests (three tests of symptoms administered on the side of the road: the walk-and-turn test; the balance test; and the horizontal gaze nystagmus test). Then, if suspicions are confirmed, the officer arrests the driver in order to continue the investigation. At the police station, a peace officer can have the suspect undergo a breath test that shows the exact blood alcohol level, or an examination by a drug recognition expert, who will have the driver go through 12 stages that make it possible to identify the category of drug involved. The sanctions are practically the same as at 80 mg, the only difference being that, once a person has a blood alcohol level above 80 mg (in a breath test), according to the Highway Safety Code, the driver's licence is automatically suspended for 90 days (and the vehicle is seized for 30 days if the blood alcohol level is above 160 mg), whereas these immediate sanctions are not imposed if the charge is only "impaired driving".

Note that, within the meaning of the Criminal Code, the drug category covers illegal drugs (cannabis, cocaine, etc.) and legal drugs (medication sold over the counter or by prescription). Driving with faculties impaired by alcohol, an illegal drug or medication can result in charges under the Criminal Code and the Highway Safety Code.

→ NOTION OF CARE AND CONTROL OF A MOTOR VEHICLE (SLIDE 25)

Having the care or control of a motor vehicle while impaired or with a blood alcohol level above the legal limit constitutes a criminal offence.

The Criminal Code specifies that a person who is behind the wheel is presumed to have the care and control of the vehicle. Furthermore, the simple fact of being in a motor vehicle (for example, asleep on the back seat) and having access to the ignition key can determine whether the person has care or control. The burden of proof rests with the offender, who must demonstrate that he or she could not drive or did not intend to drive. So caution is required when a person's faculties are impaired: the person is better off staying far away from his or her vehicle.

→ REFUSAL TO COMPLY WITH A DEMAND (SLIDE 26)

→ CONSEQUENCES OF DRINKING, DRUGS AND DRIVING (SLIDES 27 TO 32)

Generally speaking, being convicted of one of those offences under the Criminal Code has consequences (a sanction): a fine; being prohibited from driving; a criminal record; and sometimes prison.

The criminal sanctions (under federal law) are coupled with sanctions under the Highway Safety Code (HSC) (a Québec law). The HSC provides for immediate sanctions, i.e. they apply from the very day of the arrest, hence before the trial and before conviction. For example, a driver who undergoes a breath test and has a blood alcohol level above 80 mg will have his or her licence suspended immediately for 90 days. If the blood alcohol level is above 160 mg, the vehicle is immediately seized for 30 days.

If the person is found guilty, another HSC sanction is added to those provided for under the Criminal Code, namely, revocation of the licence, for a minimum period of time (according to the number of repeat offences committed) and the person is therefore prevented from obtaining a driver's licence. After the minimum period of time during which the licence remains revoked, the person must meet certain conditions before being able to again obtain a driver's licence: the person must undergo a summary evaluation of behavior relative to alcohol and drugs and participate in the Alcofrein[21] driver education program in certain cases. If the evaluation is unfavorable, the driver must undergo a second evaluation (a complete one). In addition, after the licence revocation period, the driver must drive for at least a year with an alcohol ignition interlock device.

[21] SOCIÉTÉ DE L'ASSURANCE AUTOMOBILE DU QUÉBEC (in collaboration with the ministère de l'Éducation, du Loisir et du Sport). Programme d'éducation ALCOFREIN, *Guide d'animation*, 2007.

Lastly, it is important that the driver understand that a refusal to provide a breath sample or a blood sample or undergo physical coordination tests or an evaluation by a drug recognition expert is a criminal offence who has the most severe consequences provided for under the HSC.

→ ZERO ALCOHOL (SLIDE 29)

Holders of a learner's licence or a probationary licence are prohibited from drinking alcohol. The following administrative penalties apply to individuals who violate the zero alcohol rule.

It is in the interest of a driver subject to the zero alcohol rule to provide a breath sample if a police officer demands one, since a refusal to provide one constitutes a criminal offence. If the alcohol screening device shows that the new driver has alcohol in his or her blood under the legal limit of 0.08, the sanctions will be merely administrative:

- immediate suspension of the licence for 90 days
- a fine of $300 to $600 (with costs, the amount of the fine varies from $438 to $865)
- four demerit points are entered on the driving record
- suspension for an additional three months, which are added to the immediate suspension of 90 days

→ OTHER LEGAL PROVISIONS (SLIDE 30)

Many people believe that it is legal to drink in limousines (they are often equipped with a mini-bar) or motor-coaches during a package tour. But the Highway Safety Code prohibits that and there are no exceptions.

If a person's licence is revoked for an offence related to impaired driving and the person nevertheless drives, he or she is liable to severe sanctions. And the risk of being pulled over is increased (given the cameras installed on police vehicles that can automatically read all licence plates).

→ FINANCIAL CONSEQUENCES (SLIDE 31)

A first offence costs a minimum of $1700 (fine + related costs). Other variable costs must be added on: the fees of an attorney for a proper defence at trial; a substantial increase in private insurance premiums for the vehicle; and fees for the translation of the judgment for trips to the United States, when travel is possible.

For a second infraction, costs are more than $4,500 and for a third, more than $6,000

→ SOCIAL CONSEQUENCES (SLIDE 32)

The personal and family consequences of a first impaired driving offence are numerous and difficult to deal with. Think particularly of the consequences of being prohibited from driving for the offender's occupational and family life, and the daily constraints experienced if the offender wants to drive but must do so in a vehicle equipped with an alcohol ignition interlock device.

In addition, certain jobs or job sectors (federal civil servants, teachers, health care workers, employees of banks, insurance companies, security firms and so on) may require a background check. And after a criminal conviction, certain insurance companies may require higher premiums to insure a driver again or even refuse to insure someone with a criminal record. In the event of a false declaration in that regard, the insurance company may refuse to provide compensation or may cancel the contract. Lastly, travel outside Canada, particularly to the United States, may be more difficult. US customs officials have access to a Canadian database of criminal convictions.

→ PHYSICAL AND PSYCHOLOGICAL CONSEQUENCES (SLIDE 33)

Some people must live with the fact that they injured or killed someone. In addition to the legal consequences (prison), they must spend the rest of their lives haunted by intense guilt feelings. It is easy to imagine the escalation of the consequences of that situation for their personal life and the personal lives of those near and dear to them.

Consequences for victims and their families

According to the accounts of members of victims' families, what is most difficult to accept after an accident in which alcohol or drugs were involved is the fact that the tragedy could have been avoided if the person at fault had been more responsible. For victims' families, knowing that the person who caused the death of a loved one was driving under the influence of alcohol is extremely painful. Family members often have feelings of anger, even rage, toward the offender.

References

- SAAQ Web Site : www.saaq.gouv.qc.ca
- Drugs and Driving – Warning : Risky Behaviour!, SAAQ, 2007
- M. BRAULT, J. BOUCHARD, et al., Le rôle de l'alcool et des autres drogues dans les accidents mortels de la route au Québec : Résultats finaux, SAAQ, 2004.

MODULE 11: FATIGUE AND DISTRACTIONS

FACT SHEET

Duration: 2 hours

Summary of content

PART 1: DRIVER FATIGUE, DROWSINESS AND FALLING ASLEEP AT THE WHEEL

- What is fatigue?
- Driver fatigue: Accidents and At risk Drivers
- Effects of fatigue on Driving
- Risk Factors
- Preventing Fatigue on and off the Road

PART 2: DRIVER DISTRACTION

- What is distraction
- Types of Distraction
- Cell Phones and Driving Safety Issues
- Effects of Cell Phones use on Driving
- Texting
- Available Tools

Competencies

The purpose of this activity is for the learner to be able to:

1.2	*1.2.1*	Judicious determination of physiological factors that increase risk (see 1.2.1, RSEP[22])
1.2	*1.2.4*	Appropriate determination of distraction factors that increase risk (see 1.2.4, RSEP)
1.3	*1.3.1*	Respect of laws and regulations (see 1.3.1, RSEP)
4.2	*4.2.2*	Elimination or sufficient reduction of the greatest possible number of distractions (see 4.2.2, RSEP)
4.3	*4.3.1*	Consideration of factors that influence one's ability to drive (see 4.3.1, RSEP)
4.3	*4.3.8*	Appropriate actions that make responsible driving possible (see 4.3.8, RSEP)

Activity

- Driver fatigue
- Driver Distraction

Material required

- Paper and Pencil

[22] *Road Safety Education Program, Appendices, pp. 19-24.*

Content

Introduction

Part 1 of Module 11 aims to inform learner drivers and raise their level of awareness and sense of responsibility as concerns:

- the fact that fatigue is a factor in one in five fatal accidents in Québec;
- the risk factors associated with fatigue;
- the consequences of driver fatigue;
- the importance of recognizing the early signs of fatigue and of stopping to rest in a safe area as soon as they appear;
- the importance of making sleep a priority.

Part 2 of Module 11 aims to inform learner drivers and raise their level of awareness and sense of responsibility as concerns:

- the fact that there are several different types of distraction;
- the dangers of using a cell phone while driving;
- the possible consequences of using a cell phone while driving;
- the tools available to avoid distractions.

The content of the fact sheet follows the same order as the computer-assisted (PowerPoint) presentation of Module 11—FATIGUE AND DISTRACTIONS.

→ MODULE OUTLINE (SLIDE 2 AND 3)

→ PART 1: DRIVER FATIGUE, DROWSINESS AND FALLING ASLEEP AT THE WHEEL (SLIDE 2)

- What is Fatigue?
- Driver Fatigue: Accidents and At-Risk Drivers
- Effects of Fatigue on Driving
- Risk Factors
- Preventing Fatigue on and off the Road

→ PART 2: DRIVER DISTRACTION (SLIDE 3)

- What Is Distraction?
- Types of Distraction
- Cell Phones and Driving: Safety Issues
- Effects of Cell Phone Use on Driving
- Texting
- Available Tools

→ TARGETED COMPETENCIES (SLIDE 4)

→ DRIVER FATIGUE, DROWSINESS AND FALLING ASLEEP AT THE WHEEL (SLIDE 5)

→ WHAT IS FATIGUE? (SLIDES 5 AND 6)

- Fatigue = gradual drop in alertness
- Can lead to drowsiness and falling asleep at the wheel;
- Becomes a problem once it compromises a driver's ability to perform tasks that require:
    - Attention
    - Judgment
    - sharp reflexes

Additional information:

Fatigue impairs our faculties, and we often do not even realize it. Just like alcohol, accumulated fatigue reduces our ability to concentrate and affects our judgment and reflexes, and thus our ability to drive. Its effects can play tricks on us. Since it affects our judgment, we are less able to properly evaluate our condition. We tend to overestimate our alertness and underestimate our fatigue. It is a bit like individuals who believe they are perfectly capable of driving after drinking.

It is important to understand that fatigue can be a factor in an accident even in cases where the driver has not fallen asleep at the wheel. Fatigue starts to affect a driver's alertness long before he or she begins nodding off.

→ DRIVER FATIGUE: ACCIDENTS (SLIDE 7)

- One of the leading causes of accidents and deaths on Québec roads, alongside speeding, alcohol and distraction
- From 2009 to 2013, fatigue was a factor in:
    - 21% of fatal accidents
    - 23% of all accidents resulting in bodily injury or death

Additional information:

Fatigue can lead to accidents for the following two reasons: Fatigue increases the risk of making driving mistakes and it can lead to a person falling asleep at the wheel.

→ AT-RISK DRIVERS (SLIDE 8)

- Among drivers who are most likely to be involved in a fatigue-related accident, we find:
    - young drivers (especially men) age 30 or younger
    - workers with irregular schedules
    - individuals whose lifestyle reduces the quality or quantity of sleep they get

Additional information:

Anyone can experience driver fatigue. However, some people are more at risk than others. In addition to the groups mentioned in the slide, people who are especially at risk include professional drivers and people with an undiagnosed or untreated sleep disorder.

→ CHARACTERISTICS OF FATIGUE-RELATED ACCIDENTS (SLIDE 9)

- The driver was alone in the vehicle.
- The accident happened at night (after midnight), early in the morning or early in the afternoon.
- The accident resulted in serious injury or death (because the driver did not attempt to avoid the accident).
- The accident was a single-vehicle accident in which the driver went off the road (rear-end and head-on collisions are also frequent).
- The accident took place on a limited access highway.

Additional information:

Fatigue-related accidents may also have other characteristics that are different from those listed here.

→ EFFECTS OF FATIGUE ON DRIVING (SLIDE 10)

- Slows reaction time
- Reduces alertness
- Distorts judgment
- Impairs memory
- Reduces the driver's field of vision (tunnel vision)
- Increases the risk of drowsiness and falling asleep at the wheel

Additional information:

Practically speaking, tired drivers have trouble making the right decisions on the road. They need more time to react to a given situation, such as a change on the road or an obstacle that requires a quick braking manoeuvre. In addition, their field of vision is reduced, which prevents them from properly seeing what is on either side.

→ RISK FACTORS (SLIDE 11)

- Fatigue is a physiological condition that neither willpower, nor experience, nor motivation can overcome or compensate
- Main risk factors:
    - Number of waking hours
    - Time of day
    - Lack of sleep (debt)
    - Undiagnosed or untreated sleep disorders

- Consumption of alcohol, drugs or medications
- Any combination of the above factors

Additional information:

Some people do not tolerate fatigue as well as others because of their state of health, age, sleep habits, the type of work they do, their diet or their physical condition. Innate individual differences can also result in some people being more susceptible to fatigue than others. As well, some people are more alert in the morning, while others are more alert at night.

As a rule, the main risk factors listed here must be taken into consideration. They can have a cumulative and interactive effect.

→ HOURS OF WAKEFULNESS (SLIDE 12)

- "Sleep pressure" starts to accumulate as soon as we awaken
- Between 17 and 19 hours of wakefulness: physical and mental capacities comparable to those of individuals with a blood-alcohol concentration of 0.05
- More than 24 hours of wakefulness: physical and mental capacities comparable to those of individuals with a blood-alcohol concentration of 0.10

(Source: study carried out by Dawson and Reid, 1997)

Additional information:

After 16 hours of wakefulness, most people feel the need to sleep.

→ TIME OF DAY (SLIDE 13)

- We are programmed to sleep at night and be awake during the day
- Biological clock (internal clock):
  - Regulates various biological functions (appetite, body temperature, sleep)
  - Repeats itself every 24 hours or so
  - Is influenced by the light-dark cycle (day-night)
- Alertness ebbs twice a day:
  - Deepest ebb is at night (between midnight and dawn)
  - Smallest ebb is in early-to mid-afternoon

Additional information:

Our biological clock (internal clock) follows a rhythm that repeats itself approximately every 24 hours and is called the "circadian rhythm". The word "circadian" comes from Latin: circa (approximately) and diem (day). Our biological clock regulates body temperature, appetite, the sleep-wake cycle, etc. It is partially influenced by light and resistant to change. Our circadian rhythm is what causes us to experience jet lag when we change time zones.

→ LACK OF SLEEP (DEBT) (SLIDE 14)

- Adults need 7.5 to 8.5 hours of sleep per night
- Adolescents need 9 to 9.5 hours of sleep per night
- A person who does not sleep enough accumulates a sleep debt
- The only way to pay off a sleep debt is to get enough sleep

Additional information:

Accumulation of a sleep debt:

- Most adults require 7 to 9 hours of sleep every 24 hours on a regular basis. Quality or restorative sleep is achieved in a calm environment with no interruptions, and preferably at night.
- For most people, getting fewer than 7 to 8 hours of sleep on a regular basis will lead to the accumulation of a sleep debt; this debt must be repaid by an equivalent amount of sleep. Sleep is the only way to recover from a lack of sleep.
- Adolescents and young adults require more sleep than the average adult.

→ EFFECTS OF A LACK OF SLEEP (DEBT) OR POOR-QUALITY SLEEP (SLIDE 15)

Additional information:

Poor-quality sleep or not enough sleep can have a negative effect on overall health: weight gain, greater risk of developing type 2 diabetes and high blood pressure, a weakened immune system, a decrease in motivation, mood changes and changes in interpersonal relationships, memory and learning disorders, etc.

In many industrialized countries, lack of sleep has become a source of concern. For example:

- In January 2013, the Centers for Disease Control (CDC), which is the U.S. counterpart of Québec's public health institute (Institut national de santé publique du Québec), found that lack of sleep had reached epidemic proportions among the U.S. population. The CDC's conclusions were based on data collected during a 2009 public health survey.
- Young children, and adolescents in particular, are affected by this epidemic, as was underscored by several Canadian specialists during World Sleep Day on March 14, 2014 in a statement of principles supported by the Canadian Sleep Society, the College of Family Physicians of Canada and the Canadian Academy of Child and Adolescent Psychiatry. Lack of sleep among adolescents results, among other things, from the overuse of electronic devices, overextended schedules, excessive consumption of caffeine and, above all, the fact that not enough importance is given to sleep.

→ SLEEP DISORDERS AND ALCOHOL, MEDICATION AND PRESCRIPTION/ILLEGAL DRUG CONSUMPTION (SLIDE 16)

Additional information:

Important reminder: The risk factors mentioned in slides 11 through 16 are rarely isolated and can act together to worsen the state of fatigue.

→ YOUNG DRIVERS AND FATIGUE (SLIDE 17)

- Young drivers = more affected by the effects of lack of sleep, but often overestimate their abilities;
- Adolescents and young adults are more likely to accumulate a sleep debt:
    - Busy lifestyle (school, social activities and work),
    - Natural tendency to go to bed late and wake up late, but must also respect school and work schedules,
    - Too much screen time (stimulation + screen lights) disrupts sleep,
    - Variable sleep schedules (weeknights-weekend).

Additional information:

Young people learn to drive, and they experiment and take risks. Adolescents and young adults need an average of nine hours of sleep per night. They need more sleep than older people do because they are going through a period of accelerated physical, intellectual and emotional growth. Major changes in their biological clock throw their sleep-wake cycle off by a few hours, with the result that most young adults are not physiologically ready to fall asleep before 11 p.m. and tend to get up later in the morning. Other factors also affect their state of fatigue. Their lifestyle, particularly their studies, extracurricular activities, part-time work and social life, cause young people to be overextended and to cut back on their sleep, in order to have enough time to do everything. They often find themselves on the road at the most critical time for fatigue-related accidents, that is, at night between midnight and 6 a.m. Their vulnerability to accidents is even greater when they use alcohol or drugs.

→ PREVENTING FATIGUE ON AND OFF THE ROAD (SLIDES 18 AND 19)

- A few tips for getting enough quality sleep:
    - Exercise regularly (but not too close to bedtime)
    - Eat well (avoid too much fat, salt and sugar; eat plenty of fruits and vegetables)
    - Monitor your consumption of caffeine, energy drinks, alcohol and medication
    - Take time to relax and manage your stress
    - Practice good sleep hygiene:
        - Develop a bedtime routine
        - Keep to a regular sleep schedule (no more than a 2-hour difference between weekdays and weekends)
        - Beware of late or long naps; they can disrupt your main sleep period
        - Make the bedroom off-limits to computers, televisions, phones, etc.
        - Generally speaking, make sleep a priority!

→ PREVENTING FATIGUE ON THE ROAD (SLIDES 20 TO 22)

- When possible, use active (walking, cycling, etc.) or alternative modes of transportation
- Feeling tired? Do not drive if you do not have to
    - Late nights are a risky time. Even if you have not had a drink, it might be better to sleep over
- Never drink or take drugs before driving
    - Be careful. Some medications can cause drowsiness
- Avoid driving during peak drowsy times (at night and in the early to mid-afternoon):
    - Beware of Monday mornings when you go back to your weekday schedule
- Be wary of monotonous stretches of road (straight and poorly lit roads, for example)
- Reduce your speed to avoid having to rapidly process too much information
- Avoid visual fatigue (e.g., dim the dashboard lights and clean the windshield)
- Keep the passenger compartment cool and well ventilated
- When going on a long trip:
    - Leave well rested. Do not wait until late the night before your trip to pack and do not leave in the small hours of the morning
    - Eat light meals and hydrate yourself regularly
    - Schedule breaks at least every two hours to stretch your legs
    - Plan your trip around peak drowsy times (night and early to mid-afternoon)
- Let someone else drive, as long as that person is well rested and alert
- Above all: learn to recognize the first signs of fatigue
- Stop and rest in a safe place at the first signs of fatigue
- Take 20- to 30-minute power naps to recuperate. Be sure to give yourself enough time to wake up properly before getting back on the road

Additional information:

Drinking coffee or energy drinks (Red Bull, for example), opening a window to let in some fresh air, turning up the radio, singing, shifting in your seat, chewing gum or talking to your passengers are not real solutions. Any effect they have is temporary at best and the signs of fatigue will be back before you know it. You cannot simply decide to be less tired. The only remedy for fatigue is sleep. Your willpower, driving experience, motivation and all the little strategies you use to stay awake will not make any difference. It is always best to stop at the first signs of fatigue.

→ SIGNS OF FATIGUE (SLIDE 23)

- Frequent yawning, boredom, tired eyes
- Nodding off
- Irritability or restlessness (cannot find a comfortable position)
- Difficulty concentrating and remaining alert (e.g., not noticing road signs, missing your exit, no longer looking in the rear-view mirror)
- Difficulty staying in your lane

- Late braking, slower reaction times
- Difficulty keeping a constant speed
- Tunnel vision (loss of peripheral vision)
- Memory loss (cannot recall the last few kilometres)
- Hallucinations (e.g., imagining animals on the road)

Additional information:

At the first signs of fatigue, **the only thing to do is to stop at a safe place to take a break and stretch your legs or take a nap. While a 20- to 30-minute nap is ideal, a short 15-minute nap can also help.** A break will restore your alertness for a short time, whereas a nap will help you recuperate, and you will feel rested longer. A nap cannot replace a good night's sleep, but in cases of serious fatigue, it can help you safely continue your trip for a few hours. You can stop in the parking lot of a rest area, a roadside service area, a business, a church, or any other accessible area other than the shoulder of the road. In addition to being prohibited on a highway, stopping on the shoulder is not safe, since there is a risk of collision with other vehicles. You can also stop at one of Québec's relay villages that provide a full range of traveller services.

→ ACTIVITIES: TRUE OR FALSE (SLIDES 24 TO 27)

→ REMINDER (SLIDE 28)

- Driving a road vehicle is a task requiring attention, alertness, judgment and good reflexes.
- Fatigue impairs drivers' ability to drive, often without them even realizing it, and its effects are pernicious. Since it affects judgment, drivers often tend to underestimate their level of fatigue and overestimate their abilities.
- You can learn to recognize the objective signs of fatigue so that you can take the necessary measures before it is too late.
- Sleep is not a waste of time! It is a biological necessity, essential to maintaining good mental and physical health.

→ TO LEARN MORE ABOUT DRIVER FATIGUE

SAAQ Web site

www.saaq.gouv.qc.ca/en/road_safety/behaviour/fatigue

Archives from the Journée d'information sur la fatigue au volant (November 6, 2014)

Various presentations related to driver fatigue (in French only)

www.saaq.gouv.qc.ca/evenements/journee-fatigue-2014/

Fatigue Management Guide for Use by the Carrier Transportation Industry

www.saaq.gouv.qc.ca/publications/prevention/fatigue_management.pdf

North American Fatigue Management Program (NAFMP)

This Web site presents a comprehensive fatigue management program designed for the carrier transportation industry. The SAAQ sat on the committee that oversaw the development of this program.

www.pnagf.com

"Le sommeil et les adolescents," *Revue québécoise de psychologie*, 2010, 31(2), pp.133-148.

Authors: Roger Godbout, Université de Montréal, Evelyne Martello, Laboratoire et clinique du sommeil, Hôpital Rivière-des-Prairies, Christophe Huynh, Laboratoire et clinique du sommeil, Hôpital Rivière-des-Prairies. (article available in French only)

Web site of the Université de Montréal

Le sommeil des adolescents : pas de tout repos (French only)

Professor Roger Godbout

nouvelles.umontreal.ca/archives/2007-2008/content/view/1237/227/index.html

Web site of the Douglas Mental Health University Institute, section about circadian rhythms:

www.douglas.qc.ca/info/rythmes-circadiens-qu-est-ce-que-c-est?locale=en

Institut national du sommeil et de la vigilance

The Institut national du sommeil et de la vigilance is a French institute that promotes sleep and its pathologies as a public health issue. Its mission is to raise awareness, inform and educate people about sleep disorders and vigilance. (Web site in French only)

www.institut-sommeil-vigilance.org/

DrowsyDriving.org

A U.S. Web site published by the National Sleep Foundation. It contains information on the problem of driver fatigue and discusses the means used to counteract its effects.

www.drowsydriving.org

Brochure Driver Fatigue: *Pull over to a safe place as soon as you feel the first signs of fatigue* (C-5257-A (12-08))

→ DRIVER DISTRACTION (SLIDE 29)

→ DISTRACTION: DEFINITION AND EXAMPLES (SLIDES 29 TO 32)

Distraction can generally be defined as any event or action that can turn a driver's attention away from his or her main task: DRIVING. Driving is a complex task that requires your undivided attention. Distractions can decrease your alertness and affect the way you drive by slowing down your reflexes, impairing your judgment, etc.

The following examples of distractions can be divided into **internal** distractions (distractions that can be found inside a vehicle or that disrupt an individual's attention) and **external** distractions (distractions that can be found on or near the road):

1. **DISTRACTIONS INSIDE THE VEHICULE (in the driver's mind and in the passenger compartment):**
   - ❑ Emotions, frustrations, thoughts
   - ❑ Talking on a cell phone
   - ❑ Listening to the radio/music
   - ❑ Other passengers, children, animals
   - ❑ Eating/drinking/smoking/reading/putting on makeup
   - ❑ Looking for vehicle controls
   - ❑ Display screens (computers, GPS, iPods)

2. **DISTRACTIONS OUTSIDE THE VEHICLE (information not relevant to driving):**
   - ❑ Billboards
   - ❑ Accident scenes (in another lane)
   - ❑ Weather conditions (rainbow)
   - ❑ Landscape (hot-air balloon)

Distraction is also one of the leading **causes of fatal accidents,** after alcohol, speeding and fatigue. It is therefore very important to take it into account when driving.

→ TYPES OF DISTRACTION (SLIDES 33 TO 37)

Generally speaking, there are three types of distraction:

- Visual distraction: any activity that causes drivers to take their eyes off the road temporarily
- Physical distraction: any activity that causes drivers to take their hands off the wheel
- Mental distraction: any activity that disrupts drivers' attention and prevents them from concentrating on the road

Note that these different types of distraction never occur in isolation. Indeed, they often occur in combination with one another. For instance, visual distraction is often associated with mental distraction, because looking at one thing can make you think of something else. You need to be aware that it is almost impossible to completely ignore the many distractions that can adversely affect your concentration when you drive a motor vehicle. Therefore, you haveto learn how to manage these distractions and minimize them as much as possible in order to reduce the risk of an accident.

→ CELL PHONES AND DRIVING

Contrary to appearances, **driving** is **an extremely complex task** requiring the use of several skills simultaneously.

Some people mistakenly believe that they can talk on their cell phone and drive at the same time because they are able to "multi-task". However, it has been shown that it is not safe for anyone to do these two things at the same time because the human brain can process only one action at a time. Therefore, your brain will either focus on talking on the phone or on driving, but it cannot focus on both actions simultaneously!

Driving is an activity that requires you to continually make choices depending on the situation, and to adjust your reactions according to those choices. Moreover, you have to perform all of these operations in just a few seconds**.** It is therefore essential to understand that any distraction whatsoever can play an important role when driving a vehicle.

→ THE EFFECTS OF CELL PHONE USE ON THE WAY YOU DRIVE (SLIDES 40 AND 41)

Using a cell phone at the wheel is a major source of physical and mental distraction that carries its share of risks for users. Using a cell phone while driving significantly increases the risk of being involved in a road accident or committing an offence under the *Highway Safety Code*. Here are some of the consequences of being distracted by this type of device while driving:

- You react more slowly in situations where you need to brake.
- You have difficulty driving in a straight line.
- You have difficulty avoiding obstacles.
- You have problems maintaining a safe distance from other vehicles.
- You are less aware of what is happening around you.
- Your field of vision is reduced.
- You are at greater risk of an accident.

→ MYTHS AND FACTS ABOUT CELL PHONE USE (SLIDES 42 AND 43)

Some people wrongly believe that they can use their cell phone when their car is stopped, for example, at a red light or in a traffic jam.

→ HANDS-FREE DEVICES (SLIDE 44)

Another popular belief is that hands-free devices, such as Bluetooth kits, in-ear headphones and so forth, are less distracting for drivers. This is completely false. It is important to stress that even though hands-free devices, whether or not they are built into the vehicle, are permitted and efficient, IT IS THE CONVERSATION ITSELF THAT IS THE SOURCE OF DISTRACTION AND THAT HAS THE POTENTIAL TO CAUSE AN ACCIDENT.

→ TALKING ON CELL PHONES OR WITH PASSENGERS: WHAT ARE THE RISKS? (SLIDES 45 TO 47)

Is it riskier to have a conversation on a cell phone or with a passenger?

TALKING ON A CELL PHONE POSES A GREATER RISK BECAUSE:

- ❑ The driver is less attentive to changes in traffic (i.e. the driver is distracted)
- ❑ The interlocutor cannot see the traffic
- ❑ The interlocutor is not aware of dangers that arise during the conversation
- ❑ The interlocutor cannot adjust his or her conversation based on what he or she sees
- ❑ The interlocutor does not share the driver's physical environment

TALKING TO A PASSENGER POSES LESS OF A RISK BECAUSE:

- ❑ The driver is more focused on the road
- ❑ The passenger can also see the traffic
- ❑ The passenger will be attentive to potential hazards
- ❑ The passenger can adjust his or her conversation depending on what is happening on the road
- ❑ The passenger shares the driver's physical environment

→ TEXTING (SLIDES 48 TO 50)

Some people believe that sending a text message is safer than talking on a cell phone. However, it should be pointed out that texting takes a driver's eyes off the road for longer (i.e. 4 to 6 seconds) than talking on a cell phone does. Taking your eyes off the road for that length of time at 90 km/h is like driving the length of a football field with your eyes closed.

→ TEXTING: SCOPE OF THE PROBLEM (SLIDE 51)

- CANADIANS EXCHANGE MORE THAN 270 MILLION TEXT MESSAGES A DAY.
- A REPORT COMMISSIONED BY THE SAAQ IN 2013 REVEALED THAT:
    - nearly **20%** of drivers who have a cell phone admit that they sometimes text while driving
    - **12%** of such driver text at the wheel fairly or very often

Texting: Myths and Facts

→ ACTIVITY: QUESTIONS ABOUT DRIVER DISTRACTION (SLIDES 52 TO 55)

It's a myth to believe that you can maintain control of a vehicle even when you send a text message or talk on a cell phone simply because you keep at least one hand on the wheel. The problem with talking on a cell phone or writing a text message is not so much the fact that you are handling a device or have at least one hand on the wheel; the problem is the conversation itself. A driver who is talking on a cell phone or writing a text message is not concentrating on driving. The real danger stems from the fact that the driver is more focused on what he or she is saying or writing than on what is happening on the road.

According to the Canadian Automobile Association (CAA), a driver who is distracted by reading or writing text messages at the wheel is 23 times more likely to have an accident than a driver who is not distracted by this type of activity.

→ DID YOU KNOW THAT (SLIDE 56)

Certain devices such as tablets allow you to browse the Web without a telephone function. The *Highway Safety* Code prohibits the use of such devices while driving, because they can also be a SOURCE OF DISTRACTION.

→ SAFETY TIPS (SLIDE 57)

→ AVAILABLE TOOLS (SLIDES 58 TO 60)

→ REMEMBER! (SLIDE 61)

Driving is an **extremely complex task** that requires your undivided attention. When you are **distracted**, you do not see danger coming and this increases the **risk** of collision.

To Learn More about Distraction

The SAAQ Web site contains a section on distraction that you can refer to for detailed facts and statistics on driver distraction.

MODULE 12: ECODRIVING

FACT SHEET

Duration: 2 hours

Summary of content

- Modes of transportation
- Vehicle choice and maintenance
- Road behaviours
- The physical reality: the forces at work
  - Rolling resistance
  - Aerodynamic drag
  - Acceleration resistance
- Advantages of ecodriving: a reminder

Competencies

The purpose of this activity is for the learner to be able to:

1.4	1.4.1	Determination of the principles relating to ecological, economical and safe driving (eco-driving)
1.4	1.4.2	Determination of the advantages of ecological, economical and safe driving (eco-driving)
2.1	2.1.2	Accurate evaluation of vehicle condition
2.2	2.2.5	Assessment of vehicle behaviour—laws of physics, speed, etc.
2.3	2.3.1	Employment of the means that make ecological, economical and safe driving (eco-driving) possible
4.1	4.1.5	Consideration of vehicle condition
4.1	4.1.6	Suitable planning of transportation options

Activity

- A presentation by the Agence de l'efficacité énergétique du Québec in collaboration with Virage Simulation, CAA-Québec and the Société de l'assurance automobile du Québec

Material required

- PowerPoint presentation entitled Ecodriving: For a New Generation of Drivers

Content

Introduction

Module 12 provides the learner with an opportunity to become familiar with the various concepts related to ecodriving. More specifically, it aims to stimulate learners to think about ecological modes of transportation and about choosing a vehicle on the basis of their real needs, and the impact of their decision on the environment. The module also points out the advantages of proper vehicle maintenance in terms of money savings, environmental protection and road safety

benefits. Finally, a large part of the module is devoted to appropriate road behaviours and to ecodriving manoeuvres that foster safer, more efficient driving.

It is important to tell participants that a safe and responsible driver may decide from the beginning not to drive and can choose another mode of transportation instead.

Remind the learners of certain principles of ecodriving covered in Module 1:

- Because of its focus on planning, anticipation and cooperation with the other road users, ecodriving helps reduce accident risks.
- Safe driving must always prevail over ecodriving in the event of conflict between the two:
    - Be vigilant in order to avoid potential conflicts between ecodriving and safe driving:[23]
        - Driving slowly so you do not have to stop and to save on fuel may lead to safety risks (the vehicle may end up too close to other road users);
        - Taking your foot off the gas pedal early when coming to a traffic light can disturb drivers behind you and make them careless. They may try to pass without properly preparing to do so, for instance.

In-car session 14 will give the learner driver a chance to practise certain manoeuvres related to ecodriving. These manoeuvres can be incorporated into the instruction when the learner has mastered the basic manoeuvres.

This fact sheet follows the same order as the computer-assisted (PowerPoint) presentation of Module 12, Ecodriving.

→ OUTLINE OF MODULE 12 (SLIDE 2)

- Definition and Objective of Ecodriving
- Potential Gain for the Environment
- The Big Picture
    - Mode of Transportation
    - Choice of Vehicle
    - Vehicle Maintenance
- Appropriate Road Behaviours
    - The Physical Reality: Forces at Work
    - Other Behaviours
- Advantages of Ecodriving (reminder)

[23] The International Commision for driver testing (CIECA), CIECA internal project on 'Eco-Driving' in category B driver training & the driving test. Final Report, 2007.

→ DEFINITION AND OBJECTIVE OF ECODRIVING (SLIDE 3)

→ POTENTIAL GAIN FOR THE ENVIRONMENT (SLIDE 4)

A compact vehicle that travels 20,000 km per year consumes about 1,700 litres of fuel and produces 4 tonnes of greenhouse gases. That is equivalent in volume to four two-storey, three-bedroom houses. Reducing your fuel consumption by 25%, is like putting the money for one out of every four fill ups back in your pocket.

→ THE BIG PICTURE (SLIDE 5)

Deciding not to get behind the wheel is often the best choice for energy efficiency and the environment.

If decision is made to purchase a vehicle for getting around, the choice of vehicle, made on the basis of one's needs, can have a major impact on fuel consumption. Vehicle maintenance can also significantly affect fuel costs. In addition, road behaviour and ecodriving techniques can help maximize vehicle efficiency.

→ MODE OF TRANSPORTATION (SLIDE 6)

Deciding to not get behind the wheel and to use public transit, ride a bicycle, walk or carpool is an excellent choice for the environment.

Note to the instructor

At this point in the presentation, you can ask the learners about the various options other than driving that are available to them in their area.

→ CHOICE OF VEHICLE (SLIDE 7)

→ CHOICE OF VEHICLE (CONT.) (SLIDE 8)

The *Fuel Consumption Guide* is available free of charge from most new car dealers. It can also be read online, on the Natural Resources Canada Website. The data presented in the guide are produced by manufacturers according to standardized test and analysis procedures approved by Transport Canada. The tests are done in controlled conditions in the laboratory or on an urban route. It is hard to use the data to predict a vehicle's actual fuel consumption, given the possible variety in chosen routes, weather conditions, road conditions and driving styles. The guide does allow good comparisons to be made between different types of vehicles.

→ CHOOSING THE RIGHT VEHICLE ON THE BASIS OF REAL NEEDS (SLIDE 9)

Vehicle size

Vehicle size plays a significant role in fuel consumption

There are laws of physics that act on a moving vehicle. For example, levels of rolling resistance and acceleration resistance depend on the weight of the vehicle. In addition, aerodynamic drag is directly proportional to the frontal surface of the vehicle. Therefore, it is not surprising that a vehicle that is twice as heavy and twice the size of another will consume close to twice as much fuel.

Engine cylinder capacity

Generally speaking, for the same task, a smaller (low cylinder capacity) engine will consume less fuel than a larger (high cylinder capacity) engine.

Transmission

A standard transmission generally consumes slightly less fuel than an automatic transmission and allows for better engine speeds. It is worth noting that maintaining low engine speeds (RPMs) improves engine efficiency.

Hybrid technology

Hybrid technology allows energy to be recovered during decelerations and thereby increases vehicle efficiency.

→ FUEL CONSUMPTION RATING (SLIDE 10)

This slide clearly shows that fuel consumption (litres/100 km) is directly related to vehicle size (weight and frontal surface). The difference between city and highway fuel consumption is related mainly to accelerations.

→ VEHICLE MAINTENANCE (SLIDE 11)

→ APPROPRIATE ROAD BEHAVIOURS (SLIDE 12)

A better understanding of the physical forces that affect fuel consumption will allow learners to adopt more efficient, more ecological and safer driving habits.

→ THE PHYSICAL REALITY: FORCES AT WORK (SLIDES 13 TO 27)

→ MAIN FORCES RESPONSIBLE FOR FUEL CONSUMPTION (SLIDE 13)

The forces at work are:

- Rolling resistance
- Aerodynamic drag
- Acceleration resistance

The sum of the above three forces is what has to be overcome by the driving force of the engine and what affects fuel consumption. Let us look at the forces in action in a first short simulator video done by Virage Simulation.

Note to the instructor

With the help of the video, clearly indicate the forces at work and their associated colours:

1. The rolling resistance near the tire (in grey) represents the contact between the tire and the road.
2. The aerodynamic drag is represented in blue.
3. The acceleration/deceleration resistance is shown in orange.

The following equation determines the driving force needed to move the vehicle:

F engine = **F** rolling+ **F** air + **F** acceleration + **F** gravity + **F** braking

This driving force applied over a certain distance will determine the total energy provided by the engine and, as a result, the engine's fuel consumption.

→ UNDERSTANDING AND MANAGING THE FORCES (SLIDE 14)

The graph on the slide shows each force's relative contribution to fuel consumption when driving in cities or on secondary roads and highways.

Rolling resistance is pretty much the same in cities or on secondary roads and highways. Rolling resistance is hardly affected by speed.

Aerodynamic drag is greater on secondary roads and highways than in cities, due to higher speeds. But it is still present, though weaker, in city driving.

Accelerations are responsible for about 60% of fuel consumption in city driving. This can be explained by the frequent stops and starts in traffic. The effects of accelerations on highways, however, are not negligible (28%).

→ ROLLING RESISTANCE (SLIDE 15)

A mid-size vehicle (1,650 kg) weighs 50% more than a compact vehicle (1,100 kg). In this example, the rolling resistance for a mid-size vehicle is 50% more than that for a compact vehicle.

→ HOW CAN ROLLING RESISTANCE BE REDUCED? (SLIDE 16)

Check tire pressure regularly. The pressure recommended by the vehicle manufacturer is generally marked on a sticker on the edge of the driver's door. Under-inflating tires by 15% increases overall fuel consumption by about 2%.

Because rolling resistance is directly proportional to weight, unnecessary weight on the roof or in the trunk must be eliminated.

→ AERODYNAMIC DRAG (SLIDES 17 TO 19)

Here, speed is by far the most influential factor. Aerodynamic drag increases as the square of speed. This means that, every time speed doubles, aerodynamic drag quadruples. Similarly, if speed increases from 25 km/h to 100 km/h, the vehicle is travelling four times as fast and the aerodynamic drag is multiplied by 16.

At 100 km/h, each extra km/h increases fuel consumption by 1%. So, travelling at 120 km/h instead of 100 km/h increases fuel consumption by 20%.

A car top carrier not only affects rolling resistance, but also reduces the aerodynamic drag coefficient.

An accumulation of snow on a vehicle, in addition to hampering visibility, increases the aerodynamic drag and rolling resistance coefficients.

→ ACCELERATION RESISTANCE (SLIDES 20 TO 27)

Acceleration forces are responsible for 60% of fuel consumption in city driving and one third of fuel consumption in highway driving. But they are what a driver has the most control over.

How can acceleration resistance be eliminated?

It would be mistaken to think that all acceleration resistance can be eliminated. However, by looking far ahead, anticipating traffic and slowdowns, and increasing safety margins in order to give yourself time and space to react calmly, much of it can be eliminated.

How can accelerations be reduced?

By limiting top speed between stops. Why keep accelerating if you have to stop?

How can energy be recovered while slowing down?

By “gliding along” gently and braking a few times to warn the driver following behind that the vehicle is about to stop. When a driver slows down gently, all the accumulated kinetic energy (the energy a body has because it is in motion) is recovered. It’s like coasting on a bicycle instead of pedalling.

Note to the instructor

At this stage of the presentation, in order to avoid long discussions, ask the participants to view the following slides (examples), which illustrate the various ways of putting the principles of acceleration control into practice.

→ EXAMPLE 1 (SLIDES 24 AND 25)

Let's see how to apply these principles by comparing traditional driving with ecodriving.

I have to get from point A to point B on a road that has a traffic light and a mandatory stop.

Traditional driving (black lines)

1. I accelerate up to the legal speed limit, let's say 50 km/h in town
2. I'm driving along, and the traffic light is red
3. I have to stop
4. I wait for the light to turn green
5. I accelerate up to 50 km/h
6. I drive along
7. I brake to stop at the stop sign

Ecodriving (dashed green lines)

1. I look far ahead, I anticipate, and I see that the traffic light is red
2. I slow down to a speed that will get me to the light after it turns green
3. I drive on and get to the light when it is green. "Covering" the brake so I can stop if necessary, I scan the intersection and cross it carefully without having to stop
4. I look far ahead, I anticipate, and I see the stop sign
5. I accelerate up to 45 km/h. I have reduced my speed (from 50 km/h to 45 km/h)
6. I drive along
7. I take my foot off the gas pedal early and "coast" to the stop sign. No driving (engine) force is required. I recover the acceleration force
8. I brake gently (starting soon enough to warn the other drivers that I am about to stop) and stop at the stop sign (no wheels rolling)

Note to the instructor

Go step by step, using the animation on the slide. Emphasize the safety aspect of the manoeuvre (preparing to brake, scanning the intersection). Stress coming to a full and complete stop at the stop sign.

→ EXAMPLE 2 (SLIDES 26 AND 27)

In the same way, you can save on fuel in traffic slowdowns.

Traditional driving

1. I drive at a proper speed.
2. I notice that traffic is moving more slowly ahead. I maintain my speed and catch up to the other vehicles.
3. I brake to adjust my speed to that of the vehicles ahead.
4. When the flow of traffic picks up again, I accelerate back up to the desired speed.

Ecodriving

1. I look far ahead, I anticipate, and I foresee the slowdown ahead.
2. I ease up on the gas pedal to adjust my speed to that of the vehicles ahead. I recover acceleration force.
3. My safety margin serves as a buffer, giving me the time and space required to adjust my speed without any problem.
4. The group of vehicles has had the time to get through the slowdown area and picks up speed again.
5. Once past the slow area, I increase my safety margin and get back up to speed.

The dotted black lines show the gains resulting from putting ecodriving principles into practice.

Note to the instructor

The second short simulator video by Virage Simulation can be shown now. It shows two driving styles on the same route, with different results, particularly with regard to fuel consumption.

→ OTHER BEHAVIOURS (SLIDES 28 AND 29)

→ ADVANTAGES OF ECODRIVING (REMINDER) (SLIDES 30 TO 36)

Lower risks

Over a distance of 15 kilometres in a 90 km/h zone, driving 20 km/h over the speed limit will save you barely 2 minutes and make it **6 times** more likely that you will have an accident.

Safer driving

Adopting a smooth and consistent driving style combined with early anticipation of traffic is beneficial to the safety of the driver and the other road users.

Regular vehicle maintenance and checks before long trips increase safety for the driver and the other road users.

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