Controlled Environment Driver Training Guidelines

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Contents

Key terms

Term	Meaning
CEDT	Controlled Environment Driver Training
GLS	Graduated Licensing System
Insight Training	Training aimed at making students aware of their limitations and an understanding that no amount of skill can prevent some crashes
Resilience Training	Training aimed at improving students' ability to resist temptations of unsafe or risky driving behaviour

Introduction

Background

Inexperienced drivers are among the most vulnerable road users in Australia. While the incidence of crash involvement is relatively low during the learner phase, it is particularly high during the initial six to twelve months of unsupervised/solo driving, reducing gradually throughout the provisional period, but taking several years to plateau (see Figure 1 below).

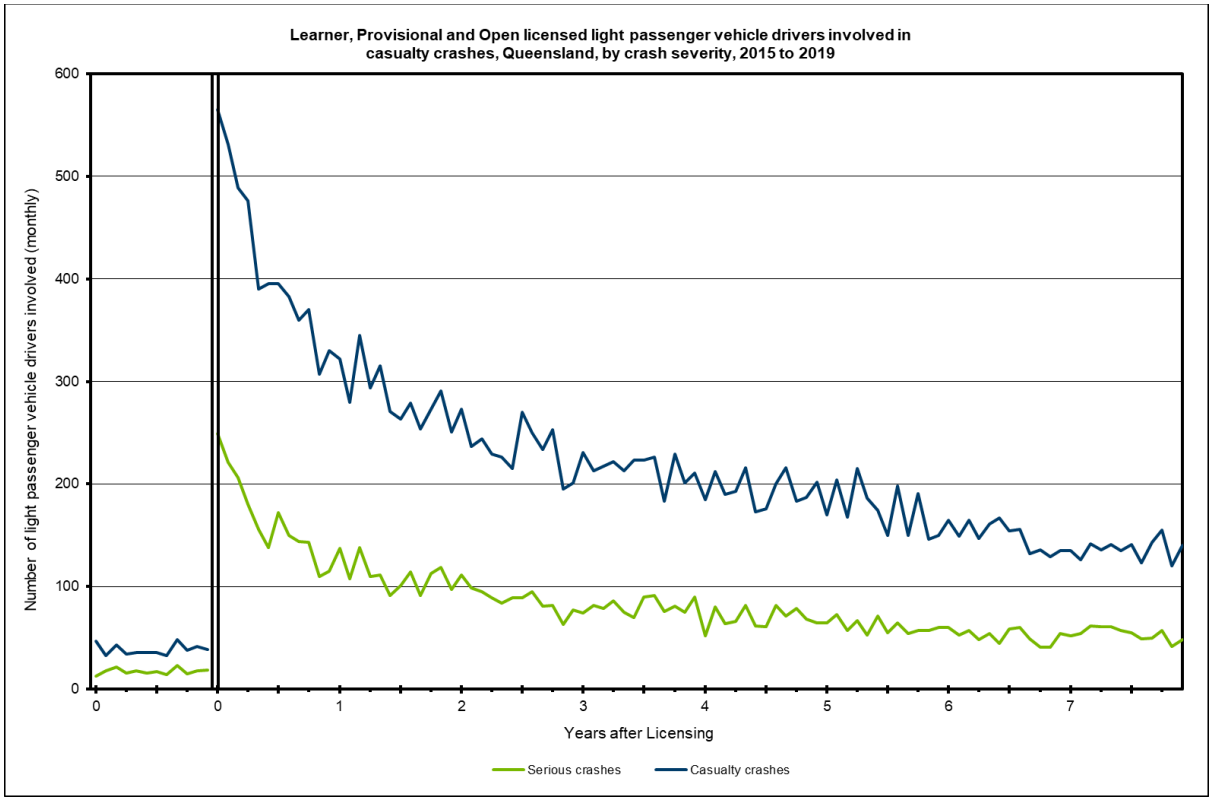

Figure 1 Learner, provisional and open licensed light passenger vehicle drivers involved in casualty crashes, Queensland, by crash severity, 2015 to 2019[1]

In Queensland, young drivers are over-represented in serious road crashes. Between 1 January 2015 and 31 December 2019 there were 316 fatalities and 10,552 hospitalised casualties as a result of crashes involving young adult drivers/riders (aged 16 to 24 years) within Queensland. This represents 26.2% of all Queensland road fatalities and 32.1% of hospitalised casualties during this period.

[1] The data in Figure 1 refers to licence duration, not driver age. Whilst many of the drivers represented in this data are young, it does include drivers of all ages. When describing risk, it is important to consider exposure (for example, the amount of driving hours or kilometres travelled). Exposure is not part of the data in this chart.

Between 2015 and 2019 there were on average 63 fatalities and 2,110 hospitalised casualties as a result of crashes involving young adult drivers/riders (aged 16 to 24 years) within Queensland.

Young people aged 16 to 24 years made up, on average, 13.6% of all Queensland licence holders between 2015 and 2019.

How can we reduce young driver risk, and what is the role of driver trainers?

A number of initiatives have been introduced in Queensland over the last decade to address the over-representation of young drivers in casualty crashes, such as the Graduated Licensing System (GLS), improved driver education programs for learner drivers (PrepL) and their supervisor drivers (PrepL Supervisor), as well as driver training, both on-road and on-range (i.e., Controlled Environment Driver Training [CEDT]) courses. The GLS focuses both on the Learner period and licensed drivers during the Provisional period – it recognises that solo driving is a new experience and young drivers need to gain on-road experience during this time. It aims to provide driving exposure in safer environments in the first instance and gradually expose young drivers to other environments as they gain more experience.

Driver education and training, particularly for learner drivers, are essential components of the suite of initiatives to improve young driver safety. These programs, when based on scientific evidence, are important and effective ways to support the 'learning to drive' process, assist in acquiring fundamentals of driving and facilitate safe driving in the long term.

Evidence suggests that some types and components of CEDT programs show promise. While teaching vehicle handling skills is important, programs that focus on developing ‘higher-order’ cognitive skills to avoid risks (e.g., hazard perception and response, insight, resilience), rather than a focus on advanced vehicle control skills, have been shown to be effective.

The guidelines contain the following components to address explicit skills:

- Hazard perception training: this aims to improve a driver’s ability to recognise and respond safely to hazards in the driving environment.

- Insight training: this aims to promote greater understanding of the risks associated with driving and to increase one’s awareness of their own limitations in driving skill. Through insight training, learners are encouraged to calibrate their driving behaviour according to the complexity of traffic situations rather than their own perceived driving ability, which diminishes the potential for overconfidence.

- Resilience training: this aims to reduce risky driving behaviour in young drivers through a focus on interpersonal skills and risk awareness and addresses deliberate risk-taking behaviour and poor choices including drink and drug driving, fatigue and speeding.

In summary, it is important that all programs and initiatives addressing young driver safety, including driver training and other educational programs, are evidence-based and effective, and that resources are available to assist driver trainers to develop and deliver training sessions that align with good practice. This guideline is designed to do just that for CEDT.

An overview of the guidelines

The guidelines were based on several sources, including:

- A review of the empirical literature addressing the efficacy of training and education for young drivers and evidence regarding good practice approaches to increase higher-order cognitive skills including hazard perception, insight and resilience, as well as vehicle handling skills.
- Consultation with a sample of driver trainers providing CEDT programs to obtain information on the goals and priorities of CEDT, current delivery approaches and content, and suggested modifications to the training content or delivery methods (or components of these) to improve young driver safety.
- An assessment of the risk of adverse CEDT outcomes (e.g., unsafe driving and ineffective learning) and development of strategies to counter these.
- A workshop with driver trainers to i) obtain feedback on a draft of the CEDT guidelines, particularly for topics/strategies that have potential to induce unsafe outcomes for young drivers; and ii) determine the level of detail required in the CEDT guidelines and supporting materials.
- Follow-up feedback from driver trainers on revised draft CEDT guidelines.

The guidelines are intended as a set of recommendations and are designed to provide useful information to a broad audience of driver trainers who deliver training targeted at various driver markets. The level of detail in the guidelines, particularly the provision of details for on-range activities and exercises (such as where to look, where to position the vehicle, when to brake, how to control and hold the steering wheel, etc.) are broad, as it is assumed that controlled environment driver trainers know and practice this level of detail.

The following information is provided for each guideline:

- The rationale for including the topic in driver training (primarily based on evidence and driver trainer consultations).
- The training goal or learning outcome for students.
- The stage of licensing for which the topic is likely to be most effective.
- Guiding principles (what skills need to be addressed) and red flags (potential risks such as overconfidence or over reliance on vehicle control skills and strategies to manage risks).
- The recommended training medium (range and/or classroom).
- Suggested exercises for implementation and descriptions of the types of supporting resources that could be used to facilitate training of the topics within the overall guideline (e.g., on-range props and demonstration where facilities permit, classroom videos, group discussion, whiteboard drawings etc).

Guideline 1: Adult learning principles

Overview

This guideline discusses how safe driving can be enhanced by applying adult learning principles to CEDT. This approach to learning includes:

- Respecting students as being capable of contributing to the learning process and encouraging them to do so
- Providing content and activities that are appropriate for the students' stage of development as a safe driver
- Helping students understand the immediate personal relevance of CEDT content and activities
- CEDT trainers attempting to understand and flexibly respond to any physical or mental health challenges of individual students.

Rationale

Research shows that use of adult learning principles in driver training can effectively help students develop higher-order cognitive skills and promote safe driver behaviour.

Goal

CEDT trainers understand adult learning principles underpinning the guideline in this publication.

Target Audience

This guideline is applicable to CEDT for all stages of licensing.

Guiding principles

While many CEDT students may still be adolescents, they are becoming adults and principles of adult learning should be employed. This is especially true for effective development of abilities such as insight and resilience. A Queensland Government publication that addresses this topic in depth is 'Driver education for senior school students (Years 10-12) and young novice drivers', which may be accessed by clicking on the link 'Literature review and key elements of a best practice program' at https://www.tmr.qld.gov.au/Safety/School-road-safety/Student-driver-education.aspx. Adult learning principles discussed in this online publication, especially relevant to CEDT, may be found under the headings:

- Vehicle handling and higher-order cognitive skills
- Program delivery and methods.

In relation to CEDT, adult learning principles[2] may be briefly summarised as follows:

- Adults are internally motivated and self-directed
- Adults bring life experiences and knowledge to learning experiences
- Adults are goal oriented
- Adults are relevancy oriented
- Adults are practical
- Adult learners like to be respected

Adult learning principles should be used during practical driving activities on the range and not be limited to classroom discussions. Indeed, classroom-based discussions could be viewed by some students as wasted time when they could be undertaking driving activities. Discussion of important issues such as hazard perception, insight and resilience should be planned to occur during and in-between driving activities, as well as the classroom.

Types of exercises that could be used to implement adult learning principles are described throughout the guideline. Trainers may, of course, use their own exercises; however, they should ensure these adhere to the guiding adult learning principles.

Implications for CEDT trainer delivery style

A key implication of adult learning principles for driver trainers is the need to adopt an appropriate style of communication, especially when engaging students in discussion of safe driving principles. Telling students about facts, such as procedures for operating controls and instruments, and when giving feedback is quite appropriate, but concepts such as insight and resilience are not simple facts and the development of these requires active student involvement. The following are common characteristics of a delivery style that actively involves students:

- A relaxed and informal manner of speech that that invites students to contribute their knowledge and experiences through questions
- Use of real or 'what-if' scenarios to prompt student discussion of key issues
- Use of open questions that invite analysis and opinion (e.g. Why…? How…? What is…?)
- When there is a group of students, encouragement of contributions from as many as is practicable (e.g. by asking them to comment on each other's responses).

This delivery style often involves asking students to draw on their own experiences as drivers or passengers and to share these experiences with the group. In some cases, this may raise discussion

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[2] Sourced from: Adult learning theory - Occupational Therapy Practice Education Collaborative - Queensland - University of Queensland (uq.edu.au)

of road trauma. Trainers need to be aware that discussions about road trauma are very sensitive and should be treated as such.

Trainers should reassure students that they do not have to talk about any issues which they feel may be distressing. Trainers should also ask students to let them know if any issues raised in discussion are distressing for them. At this point, discussion of the issue/s can be terminated and/or the student can be asked if they would like to take a short break.

Finally, the delivery style should avoid treating any driving activity as a game or challenge. There is a risk that such an approach could lead to students practising the activity when not under the care of a qualified driving trainer and becoming overconfident. To counter this, trainers should elicit student acknowledgement that performing these activities on public roads and without the supervision of a qualified driving trainer is dangerous.

Implications for CEDT at different stages of licensing

CEDT should be applicable to the current stage of student development as a driver so that the personal relevance of learning is understood. A single design of CEDT would be inappropriate for pre-Learners, early Learners, experienced Learners, drivers on provisional licences, and experienced open licence drivers. Both CEDT content and activity design should be tailored to the stage of student development as per the following examples:

- **Pre-learner permit:** CEDT content should include general awareness of road safety for all road users. Activities could include discussing student experience of road safety as a pedestrian and cyclist, extending this to the perspective of car drivers, and concluding with the need for shared responsibility for road safety by all road users. Activities may include prompting and reinforcing discussion through demonstrations of driving by a trainer, but not by students. Student driving at this stage is not needed by participants and could promote a sense of thrill seeking which would be counterproductive.

- **Early learner permit holders:** CEDT content should address basic vehicle control in simple road environments. Activities could include demonstrations and practise of starting the car, lookout, indicating, moving off gently, braking, making smooth turns, complying with road signage, and stopping. Experience with simple traffic contexts may be appropriate after competent control of the car has been demonstrated. Discussion may include the need to maintain attention to the driving task, including types of hazards on the road and the need to slow and keep a safe distance from them.

- **Experienced learner permit holders:** As learner drivers gain experience, CEDT content may be extended to more complex driving contexts, including busy traffic, driving at higher speeds, poor weather and visibility, and driving at night. These contexts may not be practicable to contrive in a controlled environment and activities may be largely discussion-based. Discussions may also extend to the student taking full responsibility for the driving task, including dealing with distractions, such as noisy passengers, planning drives to avoid hazards, such as poor road conditions, and deciding when driving should be avoided or postponed for safety reasons. Concepts of insight and resilience, as discussed in this publication, are especially relevant to this stage. Student driving activities may include tasks that demonstrate the limits of safely stopping a car at range speeds and the inability to safely manoeuvre; it is critical that these activities do not build overconfidence or be seen as a game through repeated attempts.

- **Drivers on provisional licences:** CEDT content for early licensed drivers should reinforce the content and activities for experienced learner permit holders, with discussion drawing more heavily on students' personal experiences.

- **Experienced open licence holders:** In principle, CEDT for experienced licence holders should continue to reinforce principles of safe driving, but flexibility is required to meet student expectations and needs. In particular, that principles of safe driving presented in this publication do not extend to racetrack driving or other forms of thrill seeking. There is ample research evidence to show that 'advanced' driver training leads to overconfidence on the roads and higher crash rates. An appropriate form of CEDT for experienced licence holders would be to apply safe driving principles to difficult and complex contexts that they are faced with during essential business or private travel. Driver trainers are encouraged to apply the advice in this publication to these contexts when planning these courses.

Tailoring learning to special learner needs

Limited time and resources can make significant tailoring of CEDT to individual student needs difficult or even impracticable. Nonetheless, consideration should be given to offering flexibility of approach and adapting learning principles to the needs of individuals, including those students with physical or mental health challenges. Driver trainers are not expected to conduct clinical assessments of special needs or challenges, but as educators there is a responsibility to be sensitive to these issues and to try to respond to them. Unfortunately, there is little research and evidence to prescribe specific driver training techniques for students with special needs; however, the key principle is to try to understand their circumstances and be as flexible in the conduct of training and communication methods as is reasonably practicable.

Guideline 2: Road rules

Overview

This guideline discusses how driving safely is enhanced through:

- Following the road rules
- Understanding the potential consequences of breaking road rules.

Topic 1: Follow the road rules

Rationale

An understanding of road rules is required to ensure order on roads and in traffic.

Goal

Students understand the road rules.

Target audience

This topic is applicable to students at all stages of licensing.

Guiding principles

Trainers should use the following principles and discussion points to guide implementation of this topic.

Explain the importance of consistent application of road rules for maintaining order and safety on roads and in traffic.

Emphasise the importance of maintaining knowledge of the road rules and putting this into practice when driving. Point out this will help young drivers to avoid developing bad habits.

Use the list of Queensland Road Rules described in TMR's PrepL Supervisor Course[3] for a detailed description of road rules and illustrative examples:

- Fatal 5 driving behaviours

[3] See: How to enrol in the PrepL Supervisor Course | Transport and motoring | Queensland Government (www.qld.gov.au)

- Road signs
- Giving way
- Parking
- Hazardous Situations
- Other Road users
- Licensing sanctions and consequences
- Road markings.

The emphasis should be on revision and consolidation as students will have passed the written road rules test or the equivalent, ‘PrepL’.

Suggested training media and exercises

This topic is delivered through classroom discussion and on-range demonstration where facilities permit. Trainers could use the following exercises to facilitate implementation of this topic:

Exercise 1

Use the diagrams and explanations of road rules as set out in PrepL Supervisor. After explaining each set of road rules, students are quizzed on their knowledge using the questions provided in PrepL Supervisor.

Exercise 2

Most training facilities will not be able to cater for demonstrations of all road rules. However, where facilities permit, on-range demonstrations could be used for selected road rules such as giving way or stopping at intersections or roundabouts. Trainers could also combine this with Exercise 1. A suggested approach is for the trainer to demonstrate how to follow selected road rules and then for students to practise these on the range.

Topic 2: Potential consequences of breaking the road rules

Rationale

Being aware of the potential consequences of breaking the road rules encourages compliance with road rules to promote safety.

Goal

Students are aware of the potential consequences of breaking the road rules.

Target audience

This topic is applicable to students at all stages of licensing.

Guiding principles

Trainers should use the following principles and discussion points to guide implementation of this topic.

Ensure that students are aware of all potential consequences of breaking the road rules including:

- Demerit points/loss of licence
- Financial impact
- Property damage and/or injury to self and others
- Emotional trauma
- Loss of independence
- Disruption to work/study/social/family/community life.

Suggested training media and exercises

This topic is delivered through classroom discussion or during on-range demonstrations (combined with Exercises 1 or 2, Topic 1) where facilities permit. Trainers could use the following exercise to facilitate implementation of this topic:

Exercise

Encourage discussion in the classroom or on the range of the potential consequences of breaking road rules by asking the following questions:

- What are some examples of breaking the road rules?
- Would anyone like to share their own or another's experience of breaking the road rules?
- What might be the consequences of breaking these rules?

Guideline 3: Making driving safe

Overview

This guideline discusses how driving safety is enhanced through:

- The Safe System
- Safer vehicles and vehicle safety features
- Maintaining a legally compliant and safe vehicle
- Planning safer trips.

This guideline begins by providing an overview of the Safe System approach to road safety. The Safe System provides an overall framework for young driver learning and is central to Queensland's road safety strategy.

Following this, the focus is on ways to prepare for safe driving before getting into the car. Young drivers are encouraged to drive the safest vehicle they can afford, and to ensure their vehicle is legally compliant and in good driving condition before each trip. They are then prompted to think about their own fitness to drive and to plan for factors that may affect them including fatigue and time of day, mood and health, weather conditions and other passengers.

Topic 1: Safe System

Rationale

Understanding the safe system road safety philosophy may encourage greater responsibility for road safety and promote other factors that improve road safety (by using safer vehicles and driving on safer roads).

Goal

Student understands how the safe system works, particularly in terms of their own responsibility for maintaining safety.

Target audience

This topic is applicable to students at all stages of licensing.

Guiding principles

Trainers should use the following principles and discussion points to guide implementation of this topic:

The Safe System approach to road safety marks a shift from a sole focus on crash reduction to the elimination of death and serious injury. It is designed to make allowance for the following factors:

- We all make mistakes on the road and some crashes are unavoidable
- Our body is not designed to survive in a high impact crash without being killed or seriously injured.

The Safe System approach attempts to mitigate the consequences of people's mistakes through the design of safer roads and roadsides, safer vehicles, safer speeds and the behaviour of safer people.

- Each of the four pillars of the Safe System work together to provide a safer environment, which avoids death and serious injury outcomes for simply making a mistake:
    - Safer roads and roadsides – designed to be safer through improved road surfaces, removal of roadside hazards and installation of safety barriers
    - Safer vehicles – designed to be safer through production of safer vehicles equipped with the latest safety features, including electronic stability control, front and side curtain airbags and head restraints, collision avoidance systems and better maintenance of tyres and brakes
    - Safer speeds - speed will be managed to safe levels through more appropriate speed limits. Roads will also be designed in ways that help people know what the speed limit is without having to look at speed limit signs and help them choose a safe travel speed. E.g., higher speed zones might have wide roads, whereas lower speed zones might have narrow roads.
    - Safer people - road users will be alert and compliant with road rules and drive to the conditions.
- Safety is maximised when all four pillars of the Safe System work together.
- But first and foremost, all road users need to be responsible by behaving as safely as possible on the road
    - The system is designed to help prevent death and injury to road users as much as possible if they make a mistake that results in a crash.
    - However, it is unlikely to prevent death or injury for some crashes that arise from deliberate risk taking such as drink/drug driving or speeding. As such, road users still need to be alert and compliant and take responsibility for using the road system safely.
    - Road users who are not alert and compliant and do not take responsibility for using the road system safely will face consequences including fines, accumulation of demerit points leading to loss of licence, or ultimately loss of their own, or someone else's, health or life.

Suggested training media and exercise

This topic is delivered through classroom discussion. Trainers could use the following exercise to facilitate implementation of this topic:

Exercise

Emphasise the point that human bodies are unable to withstand crash forces without being killed or seriously injured.

Play the following video which outlines the protective layers of the safe system that are in place to protect the human body in a crash.

https://www.youtube.com/watch?v=cZ2tsE_0Mlk

Topic 2: Safer vehicles and vehicle safety feature

Rationale

Research shows that driving safer vehicles equipped with the latest safety features reduces crash involvement and the severity of injury in the event of a crash. This is particularly important for young drivers who have a higher crash risk than other drivers.

Goal

Students understand how safe vehicles and vehicle safety features can reduce crash and injury risk.

Target audience

This topic is applicable to students at all stages of licensing.

Guiding principles

Trainers should use the following principles and discussion points to guide implementation of this topic.

Guidance for purchasing a safer new or used car

Safer vehicles are those vehicles designed to prevent the most common types of severe crashes and injuries. Safer vehicles include a number of primary and secondary safety features.

Primary safety features are designed to help a driver avoid having a crash. Examples of primary safety features include:

- Anti-lock brakes
- Traction control
- Electronic stability control
- Lane departure warning and lane keep assist
- Reversing sensors and cameras.

Secondary safety features are designed to prevent, or lessen the severity of, injuries to vehicle occupants in the event of a crash. Examples of secondary safety features include:

- Airbags

- Head protection with soft material in the headrest and vehicle side pillar.

Secondary safety features also include structural aspects associated with the vehicle body itself including its weight, size and the strength of the materials from which it is made.

Newer vehicles typically provide more protection for occupants in a crash as they are made from high strength materials and have better impact crumple zones to absorb energy.

Vehicles equipped with the latest primary and secondary safety features are typically referred to as safer vehicles as they offer more protection to their occupants than vehicles with older or no primary or secondary safety features.

Do safer vehicles and vehicle safety features reduce crash and injury risk?

The following evidence explains why purchasing vehicles equipped with the latest safety features is important for young drivers and can reduce their crash or injury risk:

- Statistics show that vehicles more than 10 years old are over-represented in fatal crashes[4].
- An analysis of over 1.5 million injured road users in New Zealand and Australia found that drivers of the worst vehicles rated for safety are 10 times more likely to be killed or seriously injured than a driver in the safest vehicle[1].
- Advances in primary and secondary vehicle safety features have contributed to a significant decline in deaths and injuries worldwide.
- However, the first car a young driver owns or uses is commonly the least safe. This is often due to the car being a 'hand me-down' from a well-meaning family member, a birthday present, a share car with their siblings, or bought by a learner themselves[5].
- Many young drivers and their parents are unlikely to have considered safety when purchasing a car. Features such as price, colour and preferred model are weighted more heavily in the purchase decision[2].
- The evidence shows that using the safest vehicle possible will provide better protection to drivers, especially young drivers who are more likely to crash[6]. This is why it is recommended that young drivers purchase the safest vehicle they can afford.

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[4]Newstead, S., Watson, L., Keall, M. & Cameron, M. (2017). Vehicle safety ratings estimated from police-reported crash data: 2017 update. Australian and New Zealand crashes during 1987-2015. Report No. 330. Melbourne: Monash University Accident Research Centre.

[5] Collins, S., Alexander, K., Waller, E., Cockfield, S., Harris, A. & McIntyre, A. (2013). Targeting parents to influence the safety of their young drivers: Exploratory research informing a parent communication strategy. Proceedings of the 2013 Australasian Road Safety Research, Policing & Education Conference. 28th – 30th August, Brisbane, Queensland.

[6] Whelan, M., Scully, J. & Newstead, S. (2009). Vehicle safety and young drivers. Stages 2 & 3. Analysis of young driver crash types and vehicle optimisation. Report No. 292. Melbourne. Monash University Accident Research Centre.

Guidance for purchasing a safer new or used car

It is recommended that drivers use the Queensland government's 'StreetSmarts' car safety webpage for information: https://streetsmarts.initiatives.qld.gov.au/all-drivers/car-safety. This webpage provides information on the Australian New Car Assessment Program (ANCAP) for new vehicles and the Used Car Safety Ratings (UCSRs) for second-hand vehicles.

Newly licensed drivers should be assured that safety doesn't need to be unaffordable and that they should purchase the safest vehicle they can afford. In fact, most cars in Australia since 2011 and 2012 have excellent occupant protection following their initial five-star crash test rating when new[7]. These cars are now relatively affordable used cars and would make a sensible choice for young drivers if they cannot afford a newer vehicle.

Red flags

Trainers should note that discussion of the safety benefits of high ANCAP ratings may cause some students to think they can take more risks because there is less chance of injury.

To counter this, trainers should emphasise that crashes in vehicles with high safety ratings can still cause severe injury or death of a driver and other road users, such as pedestrians, cyclists and motorcyclists. Consequently, safe driving practices are essential in all vehicles, regardless of the safety rating.

To illustrate this point, trainers could use the following points for discussion:

- Safe vehicles and vehicle safety features work to i) avoid crashes or ii) avoid or minimise the effects of a crash.
- However, in many situations even the safest vehicles and vehicle safety features will not avoid a crash or minimise the severity of injuries that may occur in the event of a crash
    - The safest vehicle on the road today provides crash protection up to 70km/h for car occupants wearing seat belts in frontal impacts and 50 km/h in side impacts with another vehicle. Car occupants are unlikely to escape serious injury or death if their vehicle collides with a tree or other fixed object at a speed above 30 km/h.
    - The human tolerance to injury of a pedestrian hit by even the safest car will be exceeded if the vehicle is travelling at over 30km/h.
- These situations can be generally avoided by being proactive and driving safely at all times including driving at a safe speed, maintaining a safe distance from other vehicles, and continuously scanning for hazards.

[7] Used car safety ratings buyer's guide 2018-19 https://www.monash.edu/__data/assets/pdf_file/0008/1479743/UCSR-2018-brochure.pdf

Driver training organisations should be using vehicles as part of CEDT with high safety ratings. If driver training organisations are using vehicles with low safety ratings, then there is a risk that this could lead to student distrust of the safety rating system.

To counter this, trainers using vehicles with low safety ratings as part of CEDT should emphasise that students should not drive such vehicles on the road. This is because newly licensed drivers will be unsupervised and will not be in a controlled and safe driving environment like on the CEDT range. Therefore, selecting a vehicle with the highest affordable safety ratings is very important.

Suggested training media and exercises

This topic is delivered through classroom discussion and potentially on-range demonstrations where facilities permit. Trainers could use the following exercises to facilitate implementation of this topic:

Exercise 1

Play the video created by the Australian New Car Assessment Program which compares the safety performance of an old and new vehicle in a crash: https://www.ancap.com.au/WhoSurvives

In this video, the driver of a 1998 Toyota Corolla collides with a driver of a 2015 Toyota corolla. The older Corolla had no safety features and its structure was not designed to protect from injury in a crash. Its driver is unlikely to survive the crash and has an extremely high risk of sustaining serious head, chest and leg injury. In contrast, the newer Corolla had dual frontal airbags, side chest-protecting and side head-protecting airbags and a driver knee airbag. Seat belt pre-tensioners were also fitted to the front seats, as was ABS and ESC. The structure of the 2015 model was also far superior to that of the 1998 vehicle and purposely designed to protect vehicle occupants in a crash.

Exercise 2

A video or on-range demonstration could be used to show students what to do if one or more safety features such as ABS or ESC is activated in a modern vehicle.

If an on-range demonstration is used, trainers should reiterate the message that in many situations even the safest vehicles and vehicle safety features will not prevent a crash or reduce the severity of injuries in the event of a crash. The best protection is to drive at safe speeds, maintain a safe distance from other vehicles and continuously scan for hazards.

Exercise 3

To illustrate the point that even the safest vehicles and vehicle safety features will not prevent injury in all situations, present a picture showing a modern vehicle heavily damaged and wedged between two large trucks.

Explain that the cause of the crash was due to the driver's failure to use their mirrors when merging on a freeway.

Ask students to consider whether any of the vehicle's safety features could have protected the driver in this situation.

Point out that the cheapest safety device in the vehicle that could have saved the driver's life was the one they did not use – the mirror.

Conclude by emphasising the importance of being proactive and using low risk driving strategies to avoid having to rely on safety features in the first place.

Topic 3: Maintaining a legally compliant and safe vehicle

Rationale

Correct display of L or P plates (where applicable) and registration plates is a requirement for legal compliance and safety.

Although mechanical problems contribute to only a small proportion of crashes, their consequences can be potentially severe. Maintaining a safe vehicle can help to avoid the risk of mechanical problems causing a crash

Goal

Students understand i) how to ensure their vehicle is legally compliant; ii) how to maintain their vehicle safely and iii) the importance of regular vehicle servicing by a qualified mechanic.

Target audience

This topic is applicable to students at all stages of licensing.

Guiding principles

Trainers should use the following principles and discussion points to guide implementation of this topic.

Correct display of L or P plates (where applicable) and registration plates is a requirement for legal compliance and safety.

While mechanical problems contribute to only a small proportion of all crashes, there is generally little a driver can do to avoid crashes stemming from mechanical issues once they are on the road.

However, it is possible to avoid crashes associated with mechanical defects by performing regular vehicle checks and having your vehicle serviced regularly by a qualified mechanic.

Regular checks

Students should ensure their L or P plates are clearly displayed on the front and rear windows where applicable and their registration plates are legible. Trainers should point out that this is a requirement for legal compliance and safety and will help students avoid fines and accumulation of demerit points.

The working condition of the vehicle should also be checked regularly (about monthly), ensuring the Owner's Manual is consulted for more information where required. It is recommended that the following vehicle components are checked:

- Check the low and high beam headlights, indicators, brake and reverse lights are working.
- Ensure the engine oil level does not fall below 'min' or 'add' level as indicated at the bottom of the dipstick.

- Ensure there is enough fuel for the trip.
- Check the windscreen wipers are working and the windscreen is clean and not cracked.
- Ensure there is at least 1.5mm of tread on the tyres. If the tread wear indicator is exposed, the tyre is not legal.
- Ensure all tyres are sufficiently inflated, including the spare tyre.
- Check the horn works and is clearly audible.
- Ensure all instruments are working including the speedometer.

Servicing by a qualified mechanic

There are some things that must be checked by a qualified mechanic. Regular vehicle servicing is recommended and will ensure your vehicle is operating safely.

Roadside assistance policy

To avoid potential unsafe consequences of mechanical failures on the road, it is recommended that drivers invest in a roadside assistance policy.

Suggested training media and exercises

This topic is delivered through classroom discussion and potentially on-range demonstrations where facilities permit. Trainers could use one of the following exercises to facilitate implementation of this topic:

Exercise 1

An on-range demonstration is given in which students are shown all or some components of performing ‘regular checks’ on a vehicle. Students then practise performing all or some of these checks.

Exercise 2

Students are shown a short video of how to perform a pre-vehicle safety check.

https://www.qld.gov.au/transport/licensing/getting/education/videos

Topic 4: Planning safer trips

Rationale

Planning for trips can help young drivers identify risks to safety and avoid common young driver crashes.

Goal

Students understand how to plan safer trips to reduce their exposure to high risk situations.

Target audience

This topic is applicable to students at all stages of licensing.

Guiding principles

Trainers should use the following principles and discussion points to guide implementation of this topic.

As a result of their inexperience, young drivers are more likely than others to crash when driving in high risk situations.

Graduated driver licensing restrictions are in place to reduce exposure to high-risk situations including driving with multiple peer passengers, driving at night, driving while using a mobile phone, and driving under the influence of alcohol.

However, it is not possible to protect drivers from all high-risk situations such as driving in poor weather conditions, driving in unfamiliar situations or driving when tired, angry or upset. In addition, young drivers may still violate their licensing restrictions (deliberately or unintentionally) even though breaking these restrictions is against the law.

Suggested training media and exercises

This topic is delivered through classroom discussion or potentially on-range where facilities permit, following Exercise 1, Topic 3 ‘Maintaining a legally compliant and safe vehicle’. Trainers could use the following exercise to facilitate implementation of this topic:

Exercise

Ask students to identify the questions they might ask themselves before taking a trip and the decisions they might have to make. For all situations, students should ask themselves whether they should be driving right now. Trips should be postponed if:

- The only available driver is too tired to drive
- The only available driver is impaired by alcohol or drugs (or potentially has alcohol or drugs in their system)

- The only available driver is too unwell to drive (e.g. suffering from a medical condition).

To avoid fatigue and impairment affecting driving, drivers should plan their trips well in advance and not leave planning to the day of the trip. This includes ensuring trips are not planned to occur the night after parties where drivers know they are likely to have had little or no sleep or alcohol/drugs in their system.

For all other situations, students should consider implementing strategies (suggested below) to ensure their current well-being or factors in the external environment do not affect their ability to drive safety.

Trainers should ask the following questions for each risk. Refer also to Guideline 4 (Driving behaviours – Causes and consequences of young driver crashes) to outline key statistics highlighting the dangers associated with fatigue, mood/health and passengers when driving.

Fatigue and time of day

- What time of day is it?
- Have I had enough sleep?
- What have I been doing today?
- If I'm taking a long trip
    - Can I share the driving with passengers?
    - Have I mapped out where I will stop for rest breaks and to re-fuel?
- Should I be driving right now?
    - Never drive if you are feeling fatigued.

Mood/health

- How am I feeling? Am I angry or upset? If so, is my mood likely to affect my driving (e.g., will I be tempted to exceed the speed limit, ignore the road rules, drive erratically?). Tips to improve concentration and avoid thinking about other distractions that may impact safe driving include:
    - Using deep breathing exercises
    - Practising mindfulness.
- Am I impaired by alcohol or drugs or could I have any alcohol or drugs in my system?
- Should I be driving right now?
    - Never drive if you are impaired by alcohol or drugs or could potentially have alcohol or drugs in your system.

Weather conditions

- What is the weather like?
- Is visibility OK?

- Are the roads likely to be slippery?
- Should I be driving right now? Tips to reduce the risk of bad weather or driving conditions include:
    - Slowing down
    - Driving to the conditions by increasing your following distance and the space around your vehicle.
    - If conditions become increasingly difficult, pull over where and when safe to do so and wait for conditions to improve.

Passengers

- How many passengers am I taking?
- Am I abiding by the passenger restrictions on my licence (if applicable)?
- Is there a risk that passengers could impact on my ability to drive safely?
- Tips to reduce risk include:
    - Asking passengers to control their behaviour
    - Using deep breathing exercises
    - Practising mindfulness.

Vehicle condition

- When was the last time my car was serviced by a qualified mechanic?
- Is my car in good condition to drive? Have I checked:
    - Oil
    - Tyres
    - Fuel
    - Lights and brakes?
- Tips to reduce risk include:
    - Checking oil, tyres, fuel, lights and brakes before driving
    - Ensuring regular vehicle servicing by a qualified mechanic (See also Topic 3, ‘Maintaining a legally compliant and safe vehicle’).

Guideline 4: Driving behaviours

Overview

This guideline discusses how driving safety is enhanced through strategies for safe driving behaviour. It addresses the topic of resilience training through a focus on interpersonal skills and risk awareness. The following topics are discussed:

1. Crash statistics involving young drivers – What's the problem?
2. Causes and consequences of young driver crashes – Why is it happening?
3. Internal and external factors contributing to unsafe driver behaviour – How can we identify triggers to the problem?
4. Strategies to promote safe driver behaviour – What can we do about it?

First, statistics showing the higher crash involvement of young drivers are used to demonstrate the importance of this group as a target group for driver training and education. The key question addressed here is 'What's the problem?"

The next topic examines the causes and consequences of young driver crashes. Students draw on their own driving experiences to discuss the main contributors to their high crash risk – inexperience and risk taking – and think about whether unsafe driving is worth the consequences if a crash were to occur. The key question addressed here is 'Why is it happening?'

Next, students think about the triggers for unsafe driver behaviour, including their own feelings and the behaviour of others. This helps them recognise when they might need to implement a strategy to reduce or eliminate the risk. The key question being addressed here is 'How can we identify triggers to the problem?'

Finally, students identify and discuss strategies for promoting safe behaviours that will help to reduce their crash risk. The key question being addressed here is 'What can we do about it?'

Topic 1: Crash statistics involving young drivers

Rationale

Young drivers are over-represented in crashes (all severities) and are more likely to be involved in a crash than any other age group. Statistics showing the higher crash involvement of young drivers provide evidence that they are an important target for driver training and education to reduce their crash involvement.

Goal

Students understand that young drivers are more likely to be involved in crashes (all severities) than any other age group. They recognise that young drivers are an important target group for driver training and education to reduce their crash involvement.

Target audience

This topic is applicable to students on their learner or provisional licence.

Guiding principles

Trainers should use the following principles and discussion points to guide implementation of this topic.

The learner driver period is the safest period for driving. Provisional drivers (P1 stage) have the highest incidence of crashing in the first six months of holding their licence - in fact, P1 drivers are almost ten times more likely to have a casualty crash than Learner drivers[8]. Even though the rate of crash involvement in the P2 phase diminishes, it is still significantly higher than for drivers with an open licence[9].

Suggested training media and exercises

Exercise

Trainers should ask students the following questions:

- Why do you think there has been so much attention devoted to young drivers' safety?
- Why did you attend the course today?

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[8] TMR Department of Transport and Main Roads QLD, Data Analysis Unit. Unpublished. Statement provided 23 April 2021.

[9] TMR Department of Transport and Main Roads QLD, Data Analysis Unit. Unpublished. Statement provided 23 April 2021.

- What are some common things your parents, teachers or others have said to you about driving?

- More importantly, what are your thoughts about young drivers' safety?

Trainers should present the following graph of Queensland young driver crash involvement by licence type. Alternatively, they could draw a sketch of the graph on a whiteboard or similar.

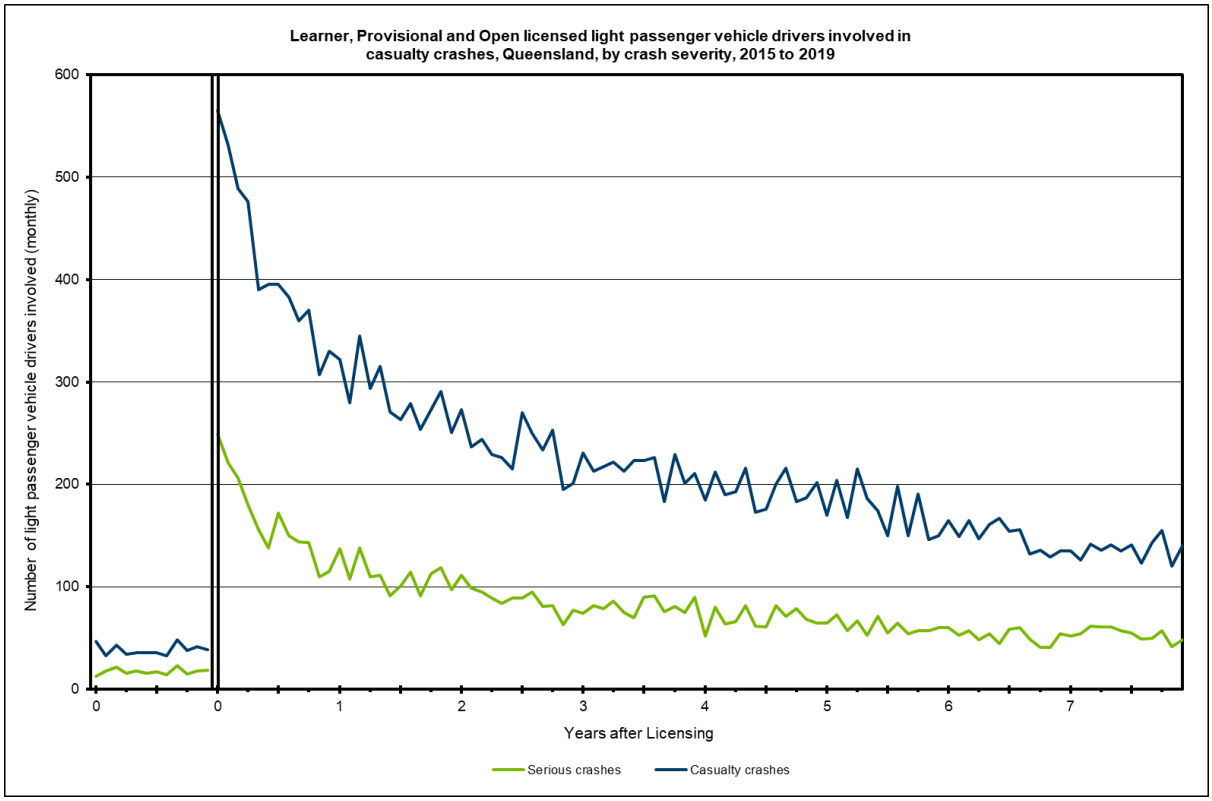

Figure 2 Learner, provisional and open licensed light passenger vehicle drivers involved in casualty crashes, Queensland, by crash severity, 2015 to 2019[10]

Trainers should ask students to point out what the graph shows (*large spike in crashes from Learner to P1 – from supervised to unsupervised driving)* noting the following points, if these are not raised during discussion:

- Provisional drivers (P1 stage) have the highest incidence of crashing in the first six months of holding their licence - in fact, P1 drivers are almost ten times more likely to have a casualty crash than Learner drivers[11].

[10] The data in Figure 2 refers to licence duration, not driver age. Whilst many of the drivers represented in this data are young, it does include drivers of all ages. When describing risk, it is important to consider exposure (for example, the amount of driving hours or kilometres travelled). Exposure is not part of the data in this chart.

[11] TMR Department of Transport and Main Roads QLD, Data Analysis Unit. Unpublished. Statement provided 23 April 2021.

- Even though the rate of crash involvement in the P2 phase diminishes, it is still significantly higher than for drivers with an open licence[12].
- The learner driver period is the safest period for driving. That's why gaining at least 100 hours of on-road driving experience during the learner period is required for promoting safety during the P1 and 2 phases.

Topic 2: Causes and consequences of young driver crashes

Rationale

Inexperience and risk-taking behaviour including, speed, distraction, non-use of restraints and impairment due to fatigue, drugs and alcohol are the main factors contributing to young drivers' high crash risk.

Young drivers often do not perceive unsafe driving behaviours as increasing their crash risk. This is partly due to their inexperience: they tend to overestimate their ability to handle unsafe driving behaviours because they think they are a better driver than they really are.

Some young people also believe that there are benefits to risky behaviour (such as impressing peers or getting to a destination faster) and that these benefits outweigh the costs of driving safely. This is deliberate risk-taking behaviour and stems from a youthful desire to challenge expectations, push limits and experience freedom.

If young drivers know the causes of their crash involvement and can understand how any perceived benefits of unsafe driving are unlikely to outweigh the costs, then they may take greater caution in, or reduce their exposure to, situations that increase their crash risk.

Goal

Students understand that inexperience and risk-taking behaviour, including speed, distraction, non-use of restraints and impairment due to fatigue, drugs and alcohol are the main factors contributing to young drivers' high crash risk.

Target audience

This topic is applicable to students at all stages of licensing, although it is most relevant to students that hold, or are about to obtain, their Provisional 1 licence.

[12] TMR Department of Transport and Main Roads QLD, Data Analysis Unit. Unpublished. Statement provided 23 April 2021.

Guiding principles

Trainers should be familiar with the main factors involved in the high crash risk of young drivers and use the information below as much as possible to back up relevant points raised by students during the suggested exercise for this topic.

One of the main factors in young driver crashes is inexperience. Inexperience can lead to actions by young drivers which increase their risk of crash involvement. Some of these actions include:

- Not observing a safe following distance.
- Driving too fast for the conditions and/or speeding.
- Failing to recognise a hazard early.
- Choosing gaps that are too small when making turns, crossing intersections or overtaking.

Inexperience can be addressed by gaining as much on-road driving experience as possible during the learner period. At least 100 hours of on-road driving experience is required for learner drivers in Queensland.

Dangerous risk-taking behaviour (often provoked by peer pressure) is another common contributor to young driver crashes, particularly amongst young male drivers with other male peer passengers. In young people, risk taking usually involves trying to meet challenges including extending skills and capabilities, pushing limits (i.e., seeing 'how far they can go') and developing self-worth and acceptance.

Research shows that the main *behavioural* factors in young driver fatal and serious injury crashes are:

- Speed
    - Young drivers are over-represented in serious crashes involving speed[13].
    - Between 1 January 2015 and 31 December 2019, young drivers/riders aged 16 to 24 years made up 40.2% of the speeding drivers/riders involved in serious crashes (resulting in fatalities and/or hospitalised casualties). This (speeding behaviour) involvement is significantly higher than the involvement of drivers/riders aged 16 to 24 years in all serious crashes for this period (2015 to 2019), which was 20.6%[13].
    - From 2015 to 2019, 13.4% of speeding infringements were for drivers/riders aged 16 to 24 years[13].

[13] TMR Department of Transport and Main Roads QLD, Data Analysis Unit. Unpublished. Statement provided 23 April 2021.

- For young drivers, speeding often involves peer pressure, showing off and overconfidence in ability[14] (a characteristic which is supposedly respected by peers).
- As speed increases there is less time for a driver to recognise and respond to hazards. Hazard perception involves proactively scanning, recognising and responding to potentially dangerous driving situations. Research has shown that young drivers take longer to recognise and respond to hazards than experienced drivers[15].
    -

- Fatigue
    - Young drivers/riders aged 16 to 24 years make up almost 30% of drivers/riders involved in fatigue-related crashes where a person is killed or seriously injured on Queensland roads[16].
    - Between 1 January 2015 and 31 December 2019, young drivers/riders aged 16 to 24 years made up 29.3% of drivers/riders involved in fatigue-related serious crashes in Queensland[16].
    - This involvement in fatigue-related serious crashes is higher than the involvement of drivers/riders of this age group in all serious crashes for this period, which was 20.6%[16].
    - Fatigue can result from lifestyle, late nights, working overtime and studying late. These factors are especially common for young drivers and often lead to what is called ‘sleep debt’. Sleep debt occurs if you get less than eight hours of sleep each night and you build up a debt of the hours you miss. So, if you only get five hours of sleep on a Monday night, you owe three hours of sleep. If you only get five hours of sleep the following night, the debt builds up and you owe even more sleep.
    - If you know you’ll be tired, plan ahead and arrange alternative transport.
    - Drivers should stop for a powernap as soon as they experience warning signs of fatigue (including yawning, poor concentration, tired eyes, restlessness, drowsiness, slow reactions, boredom and oversteering). Winding the window down, playing loud music, or drinking water or coffee are not effective methods for staying awake and contribute to a false sense of confidence that you are safe to continue driving.
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    - Fatigue is increased by the following factors:
        - Sleep loss: Sleep is the only way to cure this type of fatigue. Unless you are well rested, do not drive.

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[14] Glendon, I. (2013). Influences on young drivers’ reported driving behaviours and perceptions: A focus group study. Journal of the Australasian College of Road Safety, 24:16-29.

[15] Curry, A.E., Hafetz, L., Kallan, M.J., Winston, F.K., & Durbin, D.R. (2011). Prevalence of teen driver errors leading to serious motor vehicle crashes. Accident Analysis and Prevention, 43: 1285–1290.

[16] TMR Department of Transport and Main Roads QLD, Data Analysis Unit. Unpublished. Statement provided 23 April 2021.

        - Being awake for a long time: Driving performance after being awake for 17 hours can be equivalent to a blood alcohol level greater than 0.05[17].
        - Driving during normal sleeping hours and after lunch: Most sleep-related vehicle crashes happen between 2am and 6am, and between 2pm and 4pm[18].
        - Monotony: Even if you have had plenty of sleep the night before, driving along stretches of straight road for a long time may lead to a loss of concentration. This can be prevented by taking a 15-minute break every hour and swapping drivers if possible.
        - Individual characteristics: Age, physical condition (including disorders such as sleep apnoea) and use of alcohol influence how fast we become tired and how well we cope with fatigue.

- Mobile phone use
    - A person using a hand-held or handsfree mobile phone while driving is four times more likely to have a serious crash resulting in hospital attendance[19].
    - As a result of the high crash risks associated with using a mobile phone, learner and P1 drivers aged under 25 years are not allowed to use a phone in any way while driving unless they are legally and safely parked. This includes using hands-free or Bluetooth accessories. Passengers are not allowed to use the loudspeaker function on their mobile phones either.
    - These restrictions are in place because young drivers are still developing their hazard perception skills and need to pay full attention to driving.
    - For all drivers, especially young drivers, using a mobile phone while driving increases crash risk as a result of the following factors:
        - Failing to scan for and recognise hazards
        - Failing to respond to hazards in time
        - Drifting out of lanes
        - Poor steering
        - Driving erratically or too slowly.

- Driving at night

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[17] Williamson, A. M. & Feyer, A. M. (2000). Moderate sleep deprivation produces impairments in cognitive and motor performance equivalent to legally prescribed levels of alcohol intoxication. Occupational and Environmental Medicine 57(10): 649-655.

[18] Horne, J. A. & Reyner, L.A. (1995). Sleep related vehicle accidents. BMJ 310(6979): 565-567.

[19] McEvoy, S., Stevenson, M., McCartt, A., Woodward, M., Haworth, C., Palamara, P. & Cercarelli, R. (2005). Role of mobile phones in motor vehicle crashes resulting in hospital attendance: a case-crossover study. BMJ 331: 428-30.

- Night driving is often a key time for socialising for young drivers.
- As a result of the high crash risks associated with night driving, between the hours of 11pm and 5am young drivers who hold a P1 provisional, P1 probationary, or P1 restricted licence are not allowed to drive with more than one passenger aged under 21 years who is not an immediate family member.

- Alcohol and drugs
  - Inexperienced young drivers with a blood alcohol concentration of 0.05 g/dl have 2.5 times the risk of a crash compared with more experienced drivers[20].
  - As a result of the high crash risks associated with driving under the influence of alcohol, young drivers on their learner and provisional licence are restricted to a zero-blood alcohol concentration (BAC).
  - Many people assume that drivers are not impaired if they have a BAC below the legal level. However, drivers with a BAC between 0.02 and 0.05 are twice as likely to have a crash as drivers with a zero BAC[21],[22].
  - Legal prescription, over-the-counter medications and illegal drugs can affect your ability to drive safely. Drug driving is dangerous. Drugs can affect your judgement, vision, coordination and reflexes – all of which increase your risk of having a crash. As a result of the high crash risks associated with driving under the influence of drugs, all drivers, including young drivers, are not allowed to drive under the influence of illegal or prescription drugs.

- Carrying multiple peer passengers
  - The presence of peer aged passengers (16-21 years) increases the risk of fatal crash involvement for P1 drivers by four times compared to when travelling alone[23].
  - As a result of the high crash risks associated with carriage of peer passengers, P1 licence holders under 25 years of age can only carry one passenger aged under 21 years between 11pm and 5am.

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[20] Peden, M., Scurfield, R., Sleet, D., Mohan, D., Hyder, A., Jarawan, E. & Mathers, C. (2004). World report on road traffic injury prevention. Geneva: World Health Organisation (WHO).

[21] Queensland Government. (2019). PrepL Supervisor. Impaired Driving.

[22] Zador, P.L., et al. (2000). Alcohol-Related Relative Risk of Driver Fatalities and Driver Involvement in Fatal Crashes in Relation to Driver Age and Gender: An Update Using 1996 Data. *Journal of Studies on Alcohol*, 61(3).

[23] Senserrick, T. & Williams, A.F (2015). Summary of literature of the effective components of graduated driver licensing systems. AustRoads Research Report AP-R476-15. Sydney, NSW.

- Not wearing seat belts
    - Analysis of Queensland crash data from 2015 to 2019 shows unrestrained vehicle occupant casualties were almost 10 times more likely to be a fatality compared with restrained vehicle occupant casualties[24].
    - While most drivers wear their seat belt most of the time, young people frequently like to travel together. Sometimes that means there are more people than there are seatbelts in the car. You should never put more people in the car than you've got seatbelts for.
    - All drivers are legally required to wear a seat belt and to ensure that all occupants in their vehicle are using a seatbelt or approved restraint.

Suggested training media and exercises

This topic is delivered through classroom discussion. Trainers could use the following exercise to facilitate implementation of this topic:

Exercise

Students are encouraged to think about behaviours that they have engaged in as drivers or passengers which may increase their crash risk and to consider the potential consequences. They should consider whether there are any benefits of engaging in unsafe behaviours and if these are more important than safe driving, especially if a crash were to occur.

Trainers should refer to the causes of young driver crashes under 'Guiding principles' and use this information to emphasise relevant points raised by students during discussion. Trainers should ask the following questions:

- Does anyone have a story they'd like to share in which a risky driving behaviour could have resulted in a crash or another negative outcome?
    - Describe the risky driving behaviour that led to the incident
    - Has that experience affected your current driving? How? (prompt for potential consequences including risk of injury, loss of licence, loss of mobility, loss of trust, financial cost, loss of independence, harm to others. Trainers to note these down as they are discussed on a whiteboard or similar).
- Can anyone think of any other behaviours we haven't mentioned so far that contribute to young driver crashes? (Ask about any from the guiding principles that have not yet been mentioned. Trainers to note these down as they are discussed on a whiteboard or similar).
    - What are the potential consequences of engaging in these behaviours while driving?
- Are there any benefits to engaging in risky behaviours (such as impressing friends or getting to your destination more quickly)?

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[24] TMR Department of Transport and Main Roads QLD, Data Analysis Unit. Unpublished. Statement provided 23 April 2021.

- What behaviours do you see as beneficial?
- Do you think these benefits outweigh the costs? Why?

- Conclude the discussion by raising the following points:
  - Young drivers often do not recognise behaviours that they or other young drivers engage in as being risky. This is partly due to their tendency to underestimate risk and overestimate their own driving abilities. By recognising these behaviours, young drivers can manage them better.
  - Sometimes young drivers are aware that unsafe driving behaviours are risky. However, they engage in them anyway because they believe the benefits outweigh the costs of driving safely. Ask drivers to consider if showing off to friends or getting to a destination thirty seconds faster is really worth the risk.

Topic 3: Internal and external triggers for unsafe driving behaviour

Rationale

Risky driving behaviour can be motivated by internal and external factors. Internal factors include personal feelings experienced by the driver such as anger, excitement or sadness. External factors include activities going on outside the driver such as weather conditions and the behaviour of passengers. If young drivers understand the internal and external triggers for their own unsafe driving behaviour, then they may proactively adopt safer driving behaviours.

Goal

Students can identify internal and external triggers for their own and others' unsafe driving behaviour and understand how these triggers increase crash risk.

Target audience

This topic is applicable to students at all stages of licensing.

Guiding principles

Trainers should use the following principles and discussion points to guide implementation of this topic.

Point out that risky driving behaviour can be motivated by internal and external factors. Internal factors include how you are feeling, e.g.:

- Feeling angry about a recent dispute
- Feeling nervous about an upcoming job interview
- Feeling sad about a relationship break up.

External factors include what is happening outside of you such as:

- Weather conditions
- Time of day
- Passenger behaviour or peer pressure
- Mobile phone ringing
- Pedestrians crossing the road
- Traffic conditions.

Explain that how you are feeling on the inside (internal influences) as well as what is happening outside of you (external influences) can make it much harder to concentrate on driving safely.

Suggested training media and exercises

This topic is delivered through classroom discussion. Trainers could use the following exercises to facilitate implementation of this topic:

Exercise 1 – (Part 1)

This exercise encourages students to think about the influence of different internal and external factors while driving.

This exercise requires access to a short video highlighting the potential conflict between safe driving and expressing the excitement and freedom of independent driving. Such a video would depict young drivers in a car with peer passengers enjoying themselves and engaging in distracting activities such as using the radio, talking on the phone, leaning over the driver etc. The video would also show instances of the driver being distracted by these activities and displaying unsafe behaviour such as speeding, not noticing hazards or breaking other road rules.

Trainers with access to a video such as this should play it to students and then ask the following questions at the end of the video:

- What do you think the driver was feeling (internal influences)? *(e.g., happy, confident etc)*
- What external influences did the driver have to manage? (i.e., were there any distractions inside the car such as passengers, the radio etc, or outside the car such as other drivers, hazards, traffic etc)
- How did the driver's internal and external influences affect his/her driving? (Were they distracted, speeding, breaking any road rules, scanning and recognising hazards? etc).

Where access to a video depicting the above influences is not available, trainers could use students' accounts of their own driving experiences (e.g., a time when they first drove with passengers in the car, or were on their way to a party or going on an exciting trip) and ask the same questions as those above to prompt discussion.

Exercise 2 – (Part 1)

Ask students to think about their own driving experiences and then describe all the influences they see as being under their control while driving. Trainers should also ask students to indicate whether these influences would be considered internal or external and label them as such.

Create a list of these influences on the left-hand side of a whiteboard or similar, labelled 'Under my control'.

Ask students to describe all the influences they see as being outside of their control while driving. Trainers should also ask students to indicate whether these influences would be considered internal or external and label them as such.

Create a separate list of these influences on the right-hand side of the whiteboard or similar, labelled 'Outside my control'.

Topic 4: Strategies to promote safe driver behaviour

Rationale

If students understand strategies to manage internal and external influences on their behaviour, they may be more likely to implement these strategies to promote safe driving behaviour.

Goal

Students understand and practice strategies to manage internal and external influences on their behaviour to reduce crash risk when driving.

Target audience

This topic is applicable to students at all stages of licensing.

Guiding principles

Trainers should use the following principle to guide implementation of this topic.

Young drivers should be encouraged to develop a risk prevention mindset by identifying risks that can be brought under their control such as alcohol and drugs; night driving; speeding, fatigue; and distractions including passengers and mobile phones.

Suggested training media and exercises

This topic is delivered through classroom discussion. Trainers could use the following exercises to facilitate implementation of this topic:

Exercise 1 – (Part 2)

Draw students' attention back to the video they just saw and ask the following questions:

- The driver was influenced by internal feelings including excitement, and external feelings including distractions from passengers. These influences may explain why he was speeding/distracted/missed out on recognising hazards etc. What could be done to help manage these? *(before driving he/she could have considered the influences likely to affect his/her ability to drive safely. He/she could have been more prepared to manage passenger influences and any other distractions likely to affect his/her driving).*

- What safe driving behaviours or choices did the driver demonstrate? (includes behaviours such as slowing down when needed, scanning for hazards, asking passengers to be quiet/ignoring passenger distractions or the mobile phone ringing etc).

- What would you have done differently to the driver to ensure you were driving safely? (e.g., put the mobile phone in the glove box or turned it off before driving; asked passengers not to make too much noise etc).

Where access to a video is not available, trainers could use students' accounts of their own driving experiences (e.g., a time when they first drove with passengers in the car, or were on their way to a party or going on an exciting trip) as presented in Topic 3, Exercise 1, and ask the same questions as those above where applicable, to prompt discussion.

Exercise 2 – (Part 2)

Draw students' attention back to the list of factors they described as being outside of their control in the previous whiteboard exercise –Topic 3, Exercise 2.

For those influences listed on the right-hand side of the whiteboard that students see as being outside of their control, ask them to consider how they would bring them back under their control.

Circle the behaviours for which students identify strategies for bringing under their control while driving. Then add each one to the list of influences listed under 'Under my control' on the left-hand side of the whiteboard.

Point out that identifying the internal and external influences on driver behaviour can help with developing strategies to avoid future unsafe driving behaviour. Possible strategies are listed below but should only be pointed out by the trainer if they are not identified by students.

- By setting behaviour expectations for your passengers before or during the drive you can manage their distractions in the car. For example, before driving nominate a passenger to be the 'boss of the phones.' All occupants should hand their phone to the 'phone boss' who will hand them back at the end of the drive. Alternatively, ask all occupants to put their phone in the glove box.

- If you're in a hurry and there's heavy traffic, try not to get angry when you hit the traffic. If you think this is unavoidable, consider pulling over when safe to do so and take a break until you feel calmer. If you are feeling angry before you get into the car, consider waiting to drive until you feel calmer.

- If you're feeling distracted by something that just happened at work, try to mentally re-focus on the driving task.

Explain that some external influences, especially peer pressure from friends or passengers, can be difficult to bring under your control. For example, managing passengers urging you to speed because you are running late, or managing friends at a party asking for a lift home even though you are really tired and it would break the passenger restrictions on your licence.

Emphasise that external influences will always be a part of driving. While these influences seem like they are out of your control, what is under your control is how you plan for and make contingencies for them to reduce or eliminate risk.

Exercise 3

Students are given the opportunity to practise how they would manage the internal and external influences that could lead to risky driving behaviour in three common scenarios. They should come up with some strategies to minimise risk in each situation including what they would say and how they would say it, drawing on the examples given in Exercise 1 of this guideline.

The activity can be completed as a class, but ideally the trainer should split students into three groups and assign one scenario to each group. Students should come up with their strategy and practise role playing the scenario. Each group should then present their role play to the whole class.

Speed

You're driving your partner to an appointment, but the traffic is heavier than usual due to an earlier crash on the road and now you're running late. Your partner asks you to speed up a little but you're already driving at the posted speed limit.

Peer passengers

It's after midnight on Saturday night and you're getting ready to drive home from a party. Three of your friends are pressuring you to give them a lift home. If it was during the daytime you would do it, but they're all pretty drunk and you're worried about breaking the night-time passenger restrictions for P1 drivers.

Alcohol

You've just finished having a few drinks with friends after work. You're about to walk to the train station to go home when one of your friends offers you a lift. You'd like to go with her, especially as she's taking other friends' home too, but you know that she's been drinking and shouldn't be driving.

Guideline 5: Fundamentals of safe driving

Overview

This guideline discusses how driver safety is enhanced through:

1. Scanning, recognising and responding to hazards
2. Low risk driving strategies
3. Controlling attention to prioritise safe driving.

Research has shown that deficiencies in higher-order cognitive skills play a key role in young driver safety[25]. Higher-order cognitive skills are those that relate to thinking, planning and perception. In addition to 'safe driving' other terms commonly used to describe these skills in driving include 'fundamental driving' 'proactive driving', 'reading the road', 'developing a mental model', etc.

Research shows that while drivers learn basic vehicle control skills in the first few months of driving, they can take a number of years to develop higher-order cognitive skills[26]. This is why inexperience is the main contributor to young drivers' high crash risk.

Research also shows that supervised on-road driving experience during the learner period can help young drivers improve their higher-order cognitive skills[27]. While not replacing the importance of this, on-range training is a great start to helping drivers to understand how, why and when to apply higher-order skills and ultimately improving their safety once they are driving solo.

Topic 1 in this guideline outlines the processes involved in scanning, recognising and responding to hazards (hazard perception). Hazard perception is one type of higher-order cognitive skill in which failures have most consistently been associated with crash involvement in young drivers[28].

Adoption of low risk driving strategies which set drivers up to scan, recognise and respond to hazards safely is addressed in Topic 2.

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[25] Isler, R.B. Starkey, N.J. Sheppard, P. (2011). Effects of higher-order driving skill training on young, inexperienced drivers' on-road driving performance, Accident Analysis & Prevention, 43(5), 1818-1827.

[26] Isler, R.B. Starkey, N.J. Sheppard, P. (2011). Effects of higher-order driving skill training on young, inexperienced drivers' on-road driving performance, Accident Analysis & Prevention, 43(5), 1818-1827.

[27] Isler, R.B. Starkey, N.J. Sheppard, P. (2011). Effects of higher-order driving skill training on young, inexperienced drivers' on-road driving performance, Accident Analysis & Prevention, 43(5), 1818-1827.

[28] Horswill, M. S., & McKenna, F. P. (2004). Drivers' hazard perception ability: Situation awareness on the road. In S. Banbury & S. Tremblay (Eds.), A cognitive approach to situation awareness: Theory and application (pp. 155–175). Aldershot, England: Ashgate.

Topic 3 discusses strategies for controlling attention to the primary driving task. These strategies are important for young drivers who are still developing their hazard perception skills and are more easily distracted by competing tasks than experienced drivers.

Topic 1: Scanning, recognising and responding to hazards (hazard perception)

Rationale

Research has established a link between deficiencies in hazard perception skill and increased crash risk in young drivers.

Goal

Students understand the importance of developing hazard perception skills for safe driving and how to apply them.

Target audience

This topic is applicable to students at all stages of licensing.

Guiding principles

Trainers should use the following principles and discussion points to guide implementation of this topic:

What is hazard perception?

Hazard perception is the ability to scan your environment and recognise a hazard before you reach it so you can respond safely if required. A hazard can be any potential source of danger on or near the road that could lead to a crash. It can come from any direction. Examples of hazards include a blind corner, a pedestrian waiting to cross, a car approaching a stop sign on an adjacent street, or poor driving conditions.

Hazard perception comprises the following components:

- Scan – Actively scan the road ahead of you for potential hazards
- Recognise – Use your judgement to perceive hazardous situations and recognise when action is required and when it is not. Recognise the difference between potential hazards and hazards that require you to respond.
- Respond – Learning to recognise a hazard early allows you to make a well-informed decision on the safest way to respond.

Why is hazard perception important?

Developing hazard perception is critical because a deficit in hazard perception skills has been associated with increased crash risk[29].

Young drivers' hazard perception skills are not as well developed as those of older drivers because they lack experience. Compared to more experienced drivers, young drivers':

- Don't scan far enough into the distance
- Don't recognise that a hazard is a hazard
- Don't recognise hazards as quickly
- Don't respond in time to avoid the hazard when they need to
- Think that their driving skills are better than they really are.

All of these factors contribute to young drivers' higher risk of crashing.

Steps involved in scanning, recognising and responding to hazards

The first step to good hazard perception is being able to identify risks by scanning the environment. Scanning is keeping your eyes moving, checking in one area for a couple of seconds and then moving your eyes to another area. It is important to look beyond the car in front and scan the entire road environment. When scanning look:

- In the distance
- At the road surface
- To your left and right
- Regularly at your mirrors and instruments.

The next step to developing good hazard perception is to recognise the difference between potential and actual hazards and to practise pointing these out. Actual hazards are those that require you to respond such as by braking or changing position on the road (e.g., the car ahead suddenly brakes or the car in the lane next to you starts to veer into your lane).

Potential hazards are those that do not require a sudden response, but drivers should be prepared to respond if needed (e.g., a pedestrian is standing on the side of the road and you are slowing in readiness to brake, in case they start to walk out in front of you). It is also important to understand that hazards can be seen or unseen. Drivers need to be aware of potential hazards that they cannot

[29] Borowsky A, Shinar D, Oron-Gilad T. (2010). Age, skill, and hazard perception in driving. Accident Analysis and Prevention, 42(4), 1240-1249.

see, e.g., approaching a blind corner, an intersection with low visibility or signage warning of an obscured driveway.

The last step to developing hazard perception is to respond safely when required. Safe responding occurs when a driver has learnt to recognise a hazard early by effectively scanning their environment. For example, by noticing a vehicle that is slowing down and indicating three or four vehicles ahead, you can adjust your speed before the vehicle directly in front has even applied their brakes.

On-road driving practice is essential to developing good hazard perception skills. The more you drive, the more you'll become proficient at scanning, recognising and responding to hazards.

Red flags

Driver trainers should be aware that students may become overconfident through successfully identifying hazards in a controlled environment.

To counter this, trainers should focus feedback in hazard perception training on discussion of strategies (to avoid distraction, anticipate hazards, make early safe responses) rather than right/wrong responses.

Feedback for good performance should reinforce what was done correctly.

Feedback for errors should ask the student to assess what happened, why and how to improve.

Suggested training media and exercises

This topic is delivered through on-range demonstrations where facilities permit and classroom discussion . Trainers could use one of the following exercises to facilitate implementation of this topic:

Exercise 1

If facilities permit, students drive on the range with the trainer and identify and discuss hazards or potential hazards set up along a pre-defined route by the trainer (e.g., traffic cones, other vehicles or pedestrians, gravel, wet surfaces etc). Commentary driving could also be used if there are enough hazards. A commentary drive is where the driver verbalises hazards as they arise (talks out loud) and suggests ways to respond safely if required. At the end of the drive, trainers should point out and discuss any hazards that students missed, why they missed them, and how they could improve their hazard perception in future drives.

Exercise 2

This exercise could be implemented in the classroom by trainers with access to video footage depicting hazards along an on-road drive. Commentary driving could also be used.

Students take it in turns to provide commentary of actual and potential hazards they need to look out for, from the perspective of a driver.

As it may not be practical for all students to commentate the full drive, a suggested approach is for each student to commentate for 30-60 seconds each. When they are not commentating, students could write down all the hazards they see throughout the full drive.

At the end of the video, trainers should point out and discuss any hazards that students missed.

Trainers considering using these exercises should refer to PrepL Supervisor 'Conducting a commentary drive' which outlines how to conduct a commentary drive. Trainers could also view the short videos on the Queensland Department of Transport and Main Roads website showing real life driving situations with commentary by an experienced driver https://www.tmr.qld.gov.au/Safety/Driver-guide/Identifying-hazards-when-driving.aspx

Trainers should also refer to '*Steps involved in scanning, recognising and responding to hazards'* under *'Guiding principles'* above, so that students can practise the process of scanning, recognising and thinking about when they would respond to a hazard as they drive on the range or watch the video.

Topic 2: Low risk driving strategies

Rationale

Application of low risk driving strategies can help drivers avoid getting into situations where an incident or crash is unavoidable. Low risk driving includes good observation, speed management and road positioning – skills which set drivers up to recognise and respond to hazards safely.

Goal

Students understand low risk driving strategies and how to apply them.

Target audience

This topic is applicable to students at all stages of licensing.

Guiding principles

Trainers should use the following principles and discussion points to guide implementation of this topic.

Low risk driving strategies focus on being proactive to avoid getting into situations where an incident or crash is unavoidable.

A low risk driver has good observation, speed management and road positioning – skills which set drivers up to recognise and respond to hazards safely.

Driving is never risk free, but drivers should always aim to drive 'low risk'.

The following are key low risk driving strategies that support hazard recognition and responding.

- Observation (as discussed above in Topic 1). It is not enough to just watch the car in front of you. Looking more than one vehicle ahead will improve your ability to respond to hazards. Be prepared to react to things like brake lights or indicators. If the traffic ahead of you is reacting, you will have time to do so too.

- Speed management

- Drive within the speed limit or slower if conditions are not optimal (e.g., rain, fog, slippery road surface, darkness etc). This will give you time to react and stop for any hazards within the distance you can see is clear.
- When you see a hazard/s, slow down and prepare to stop (referred to as setting up the brakes).
- If you cannot see at least five seconds ahead you must slow down.

- Road positioning
  - Position your vehicle to maximise the distance from hazards (referred to as buffering). For example, moving to the left at the crest of a hill to create space from oncoming vehicles, or moving away from parked cars to avoid pedestrians and doors opening.
  - Ensure you always check your mirrors before making any change to your position or speed. If changing lanes, always ensure you do the following in sequential order: check your mirrors, check your blind spot by performing a shoulder check, and then put your indicator on.

Good observation, speed management and road positioning will help to maintain enough time and space around your vehicle to respond to hazards and avoid a crash.

Both reaction time and response time determine how much space is needed. Staying one car length behind the vehicle in front is not enough. Two seconds is typically cited as the minimum time needed for experienced drivers to react and respond to a hazard under ideal conditions. Inexperienced drivers should be encouraged to allow longer gaps, with some driver trainers suggesting that up to five seconds is needed. Gaps longer than two seconds are also needed when visibility is poor; roads are slippery, or when driving a heavy vehicle or towing a trailer/caravan.

The two (or five) second gap can be used in two situations i) when you are following another vehicle or ii) when another vehicle is following your vehicle or suddenly pulls out in front of you.

Select safe following distances

Maintaining a safe following distance is essential to reduce the risk of driving into the rear of a vehicle. This is because the vehicle in front has the potential to stop very quickly if it collides with another vehicle or stationary object. Rear end collisions are one of the most common crash types for all drivers, including young drivers. Indeed, young drivers aged 16-24 years are identified as being at fault in more rear end crashes leading to an injury and subsequent claim to the Queensland Compulsory Third Party scheme than any other age group[30].

A safe following distance to the vehicle in front is at least two seconds for experienced drivers and more (say, about 5 seconds) for inexperienced drivers during ideal conditions.

Safe following distances vary depending on a number of factors:

[30] MAIC Motor Accident Insurance Commission. Unpublished. Statement provided 20 April 2021.

- The driving conditions: in poor driving conditions, such as where visibility is low or roads are slippery, increase your following distance to four or more seconds (experienced drivers) or 10 or more seconds (inexperienced drivers)

- The type of vehicle you're driving: when driving a heavy vehicle, increase your following distance to four or more seconds. When driving a vehicle towing a trailer or caravan, your following distance should be two seconds plus one extra second for each 3 metres of trailer length.

It is necessary to increase your following distance in these situations as it will take longer for you to stop if the vehicle in front suddenly stops.

The two second following distance rule can be calculated using the time-lapse method (trainers should amend the following advice to up to five seconds for inexperienced drivers):

- As the rear of the vehicle in front of you passes an object at the side of the road such as a power pole, tree or sign, start a two-second count 'one thousand and one, one thousand and two.

- If your car passes the object you picked before you finish the two-second count, you are following too closely. Slow down and repeat the count again until the two-second following distance is achieved.

Protect the space in front of your vehicle

Explain that the two (or five) second rule can also be used for situations where there is potential for something to move into the space around your vehicle; e.g., the car behind yours could be following too close (tailgating) or a car in an adjacent street could fail to give way and pull out in front of you.

- If a car is following too closely behind you, reduce your speed and pull over to the left when safe to do so and allow the vehicle to pass.

- If there is potential for a hazard to enter the space in front of your vehicle, reduce your speed to create a buffer. It is necessary to maintain enough space for all potentially hazardous situations, including blind corners and crests.

Red flags

Driver trainers should be aware that the focus on a minimum number of seconds following distance may result in some students thinking this rule is an aim point rather than a minimum to be adjusted for driving conditions.

To counter this, driver trainers should avoid overly focussing on the two-second following distance rule. Instead they should emphasise that this rule should be treated as a minimum which needs to be adjusted for conditions.

Driver trainers should be aware that students may become overconfident through successfully applying low risk strategies in a controlled environment.

To counter this, trainers should focus feedback in low risk training on discussion of strategies (to avoid distraction, anticipate hazards, make early safe responses) rather than right/wrong responses.

Feedback for good performance should reinforce what was done correctly.

Feedback for errors should ask the student to assess what happened, why and how to improve.

Suggested training media and exercises

This topic is delivered through classroom discussion and on-range demonstrations. Trainers could use the following exercises to facilitate implementation of this topic:

Exercise

In the classroom, trainers should use a whiteboard or similar to illustrate the theoretical principles of low risk driving strategies and then demonstrate these on the range. Students should be given opportunities to practise low risk driving strategies on the range with guidance and feedback from the trainer.

Play the following short video on safe following distances:

https://www.qld.gov.au/transport/safety/rules/road/distances#:~:text=In%20most%20cases%2C%20a%20safe,towing%20a%20trailer%20or%20caravan.

If facilities permit, demonstrate how to calculate a safe following distance on the range and then allow students to try this for themselves.

Topic 3: Control attention to driving to prioritise safe driving

Rationale

Young drivers find it difficult to prioritise attention to the primary driving task when dealing with competing tasks, particularly distractions (e.g., operating radios, coping with distracting passengers). This is because young drivers tend to underestimate the risks involved in driving and overestimate their own driving abilities. Sometimes they also perceive that there are immediate benefits to engaging in distracting tasks such as impressing friends or pushing limits.

While these behaviours are part of the normal process of maturation, young drivers are still developing their higher-order cognitive skills, particularly hazard perception, and they have less ‘spare’ capacity to cope with competing tasks. For these reasons, distraction is more dangerous for young drivers and plays a bigger role in their crash involvement.

Goal

Students understand the importance of controlling attention to prioritise safe driving tasks.

Target audience

This topic is applicable to students at all stages of licensing.

Guiding principles

Trainers should use the following principles and discussion points to guide implementation of this topic.

Young drivers find it difficult to prioritise attention to the primary driving task when dealing with competing tasks, particularly distractions (e.g., operating radios, coping with distracting passengers).

Young drivers are still developing their higher-order cognitive skills, particularly hazard perception. Higher-order cognitive skills are those that relate to thinking, planning and perception. They are primarily responsible for keeping drivers safe and can take many years to develop. This explains why young drivers have less spare attentional capacity to cope with any tasks that compete with driving, especially distractions.

For these reasons, distraction is more dangerous for young drivers than other drivers and plays a bigger role in their crash involvement. It is also why young drivers have restrictions on their licence including mobile phone use, passengers, night-time driving and drink driving. These restrictions are designed to help young drivers devote all their attention to driving which is necessary to keep them safe when their skills are still developing.

Suggested training media and exercises

This topic is delivered through classroom discussion and on-range demonstrations. Trainers could use the following exercises to facilitate implementation of this topic:

Exercise 1

Students discuss some common distractions they have encountered while driving. Examples include mobile phone use, passengers, loud music, feeling angry, or tired.

They then discuss strategies that could be implemented to plan for and manage the different types of distractions. This exercise could also be combined with Exercise 2, below. Trainers should refer to Guideline 4, Topic 4 – ‘Strategies to manage unsafe driver behaviour’ which overlaps with this topic.

Exercise 2

If appropriate facilities are available, trainers could create a situation in which students’ capacity to drive safely is impaired by a secondary non-driving activity such as the trainer asking questions of the student driver as they attempt to concentrate on driving, listening to a loud radio, etc. This activity could be simulated (such as in a driving simulator or mock-up vehicle where no real driving occurs) or implemented on the driving range.

Trainers should be aware that activities in which students are asked to engage in or observe unsafe behaviour might encourage students to treat driving as a game or challenge where they attempt the task outside of a controlled environment. To counter this, trainers should elicit student affirmations that trying these activities on real roads is dangerous. This risk will likely be minimised by i) only allowing one student in the group to take part in the activity while others observe rather than allowing all students in the group to take turns and ii) ensuring the person assigned to create distractions is the trainer rather than the student.

At the conclusion of the drives, students are asked to describe how the distractions affected them. Trainers point out the errors that drivers made when they were distracted and explain the real-world

consequences that these errors could have (e.g., moving in and out of their lane, missing hazards and road signs, crashing into other vehicles or pedestrians).

Guideline 6: Smart driving

Overview

This guideline discusses how driving safety is enhanced through:

- Controlling the car
- Braking and steering safely
- Safe manoeuvring.

Research has shown that vehicle control skills are learnt relatively quickly by most young drivers[31]. In contrast, higher-order cognitive skills take many years to develop and play an important role in the high crash risk of young drivers[32].

Evidence suggests that young drivers tend to overestimate their own driving abilities as a result of being overconfident[33]. Since young drivers learn vehicle control skills relatively quickly, driver training programs which place an emphasis on vehicle control skills and overlook higher-order cognitive skills have been found to compound this problem[34]. In some cases, such programs have even led to increased risk taking on-road and greater involvement in crashes by young drivers[35].

In line with the latest research, two key approaches are suggested to prevent the development of overconfidence and risk taking in young drivers when training vehicle control skills.

First, vehicle control skills training should be couched in terms of its relationship to higher-order cognitive skills training. The focus is on hazard perception and risk awareness and can be achieved through trainer feedback.

Second, allowing extensive practise of vehicle control skills on the driving range should be avoided. Once students have built up enough confidence in their ability, trainers should expose them to

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[31] Simons-Morton, B. & Ehsani, J. (2016). Learning to drive safely. Reasonable expectations and future directions for the learner period. Safety (Basel); 2(4).

[32] Quimby A. R., G. Maycock, I. D. Carter, R. Dixon and J. G. Wall. (1986). Perceptual abilities of accident involved drivers. Crowthorne, UK: Transport Research Laboratory: Report No.: TRL Report RR27.

[33] De Craen, S, Twisk, D.A.M, Hagenzieker, M.P., Elffers, H., Brookhuis, K.A. Do young novice drivers overestimate their driving skills more than experienced drivers? Different methods lead to different conclusions. Accident Analysis & Prevention, 43 (5):1660-5.

[34] Gregersen, N. P. (1996). Young drivers' overestimation of their own skill: An experiment on the relation between training strategy and skill. Accident Analysis & Prevention, 28, 2, 243-250.

[35] McIntyre, A. (2015). The effectiveness of driver training/education as a road safety measure. 2016 edition/update. Melbourne: RACV.

situations where they can better experience their own limitations by falling short of achieving driving tasks they normally believe they can handle. This is referred to as the insight approach[36].

These approaches are described in further detail under 'Red flags.'

Topic 1: Control the car

Rationale

Controlling the car is necessary for safe vehicle operation while at the same time attending to hazard recognition and responding.

Learning outcome

Students can operate vehicle controls while attending to hazard recognition and responding.

Target audience

This topic is applicable to students on their learner permit.

Topic 2: Brake and steer safely

Rationale

Smooth braking and steering are necessary for driving on roads and in traffic safely.

Learning outcome

Students can brake and steer safely and smoothly.

Target audience

This topic is applicable to students on their learner permit or provisional licence.

[36] Gregersen, N. P. (1996). Young drivers' overestimation of their own skill: An experiment on the relation between training strategy and skill. Accident Analysis & Prevention, 28, 2, 243-250.

Topic 3: Safe manoeuvring

Rationale

Safe manoeuvring is necessary for responding to hazards.

Learning outcome

Students can manoeuvre the car to safely respond to hazards and maintain a safe gap from vehicles and other road users.

Target audience

This topic is applicable to students on their learner permit or provisional licence.

Red flags

Driver trainers should be aware of potential red flags when training vehicle control skills and how to manage them.

1. Avoid extensive practice of vehicle control skills

Trainers should note that extensive practice of vehicle control skills may cause some students to think they have mastered these skills. This may lead to complacency or overconfidence and increased risk taking after CEDT.

To counter this, trainers should limit the number of repetitions of driving tasks by students (e.g. a specific braking task) on the range to about three. This recommendation is based on the research literature and was reported as standard practice in most driver training organisations consulted for this publication. However, trainers should use discretion for on-range practice and maintain an appropriate balance between building confidence in students and minimising overconfidence that could lead them to take risks on road after CEDT.

2. Use insight to develop student awareness of their limitations

Driving tasks should encourage student insight that some situations will lead to a crash regardless of driver skill level. Failure to do so may result in students completing CEDT believing that they can rely on their driving skills to avoid crashes, leading to overconfidence and increased risk taking.

To reinforce this, trainers should include, for each skillset, at least one trial where a student will not meet criteria for safe driving (e.g. they will hit a cone or not bring the vehicle to a stop within a specified distance). It is recommended that this be implemented as the last trial in the set of vehicle control skills being trained (e.g., stopping at a set point in a braking exercise). Feedback should be focussed on the need to avoid such situations rather than rely on a skilful response. Do not allow a student to re-attempt the task, pointing out that there is no opportunity to do so after a real crash.

Prior to implementing the final ‘unsuccessful’ trial, trainers should ensure that students have achieved an appropriate level of competency following practise trials that will maximise their on-road safety without inducing overconfidence. It is not recommended that students be set up for an ‘unsuccessful’ trial if they have not achieved a satisfactory level of competency during practise trials. To the extent possible, training should maintain an appropriate balance between building confidence in students and minimising overconfidence that could lead them to take risks on road after CEDT.

3. Focus feedback on driving proactively to avoid driving reactively

Trainers should also avoid demonstration and practice of vehicle control skills without discussion of their limitations and the importance of avoiding reliance on them. Failure to do so may result in students overly relying on vehicle control skills rather than on higher-order cognitive techniques that prevent them from getting into crash situations.

To reinforce this, trainers should emphasise the importance of anticipating hazards and acting early to avoid them when teaching basic vehicle control skills. Focus feedback regarding student control of the vehicle on safe outcomes (e.g. safe and low-risk control) and avoid terms such as 'skilful'.

Such proactive techniques include those described in Guideline 5 and should be reiterated in discussions accompanying on-range demonstrations, where applicable:

- Actively scanning for hazards, recognising hazards and knowing when to respond;
- Driving within the speed limit or slower if conditions are not optimal (e.g., rain, fog, slippery road surface, darkness etc). This will give you time to react and stop for any hazards.
- Maintaining a safe position on the road to maximise the distance from hazards (referred to as buffering).
- Ensuring a minimum two second following distance behind the vehicle in front.
- Maintaining enough space around your vehicle when a driver is following closely behind you or in case someone pulls out in front of you.

4. Avoid demonstration of high-performance skills

Some students may aim to achieve the level of skill of trainers (through trainer demonstration) rather than avoid risky situations. This may lead to overconfidence and increased risk taking after CEDT.

To counter this, trainers should not demonstrate driving activities that are 'high performance' or inherently unsafe (including skid pan activities or slalom driving). Trainers should especially avoid any suggestion that advanced skills can make these activities safe.

Suggested training media and exercises

These topics are delivered through on-range demonstrations and limited student practice. They may also be supported through classroom activities in which trainers use diagrams to explain on-range demonstrations.

On-range activities should address these topics in ways that are appropriate for the students' stage of driving development. Especially for students who are early in their learner permit stage, the on-range activities should progressively establish and build on each topic.

Exercise 1

Trainers demonstrate the correct approach to operation of vehicle control at low speed including: safely and smoothly starting and stopping the car, changing gears (if applicable), turning and cornering, and steering. Students then take turns to practise each of these operations under the trainer's supervision.

Exercise 2

After completing Exercise 1, trainers demonstrate the correct approach to safely and smoothly braking, steering and cornering at higher speeds if facilities permit. Students then take turns to practise each of these operations under the trainer's supervision.

Exercise 3

After completing Exercises 1 and 2, trainers demonstrate the correct approach to safely and smoothly manoeuvring around hazards at low speed if facilities permit. Hazards could include other vehicles, pedestrians, debris or road surface conditions (real or represented by cones for example). Trainers should also incorporate training of each of the vehicle operations outlined in Exercises 1-3 and ensure that this exercise is conducted at low speed to avoid representing a slalom activity. Students then take turns to practise each of these operations under the trainer's supervision.

Exercise 4

Trainers explain and then demonstrate the relationship between reaction time, speed and stopping distance through a braking exercise conducted at 60 km/h and then again at 65 km/h. Students are asked to drive up to the required speed limit and then brake at the point when the trainer blows a whistle. Trainers should point out how far the student travelled (i.e., the stopping distance) which is impacted by both their speed and reaction time (i.e., the time taken to realise that braking is required plus the time taken to apply the brakes).

Trainers should point out how much of a difference 5 km/h can make to their stopping distance and ask students to consider the safety implications of this difference when driving on real roads.

Throughout this exercise, trainers should also discuss and demonstrate each of the guiding principles for low risk driving strategies so that students understand the importance of avoiding situations where last-minute braking is required. These include a) good observation (where to look and when), b) good speed management (not speeding and/or making sure travel speed is always appropriate for the conditions), c) safe road position including using space effectively to buffer away from hazards and d) maintaining a safe following distance from vehicles ahead.

Trainers should include the following during on-range activities:

- An explanation of why controlling the car and braking and steering smoothly are fundamental to subsequent safe manoeuvring activities.
- A focus on early recognition of, and responding to, hazards when training safe manoeuvring activities.

- An emphasis on the importance of early actions to avoid 'last second' risky braking and swerving. This is crucial to communicate to students.
- Avoidance of activities that aim to *teach* emergency 'last second' response techniques because these are highly likely to develop overconfidence; there is strong evidence that this results in higher crash involvement.

Guideline 7: Program development through evaluation

Overview

The Department of Transport and Main Roads will separately evaluate the effectiveness of the guidelines and, while this is not the responsibility of the CEDT provider, respectfully requests that the following records are kept for each CEDT course conducted:

- Stage(s) of driver development targeted by the CEDT course:
    - pre-learner permit
    - early learner permit holder
    - experienced learner permit holder
    - P1 provisional licence holder
    - P2 provisional licence holder
    - open licence holder
- Number of students
- Course location
- Course duration (hours).

Further information

What research evidence tells us not to do

A review of research literature related to CEDT reveals the following:

- DO NOT teach or demonstrate advanced driving techniques – these lead to overconfidence and greater crash involvement
- DO NOT treat on-range exercises as a game or a challenge – this promotes driving as being a thrill-seeking activity and leads to risk-taking
- DO NOT suggest that skilful driving can reduce the likelihood of a crash – this encourages delayed responses to emerging hazards
- DO NOT suggest that high safety ratings (e.g. ANCAP) of a car will prevent a crash – high safety ratings may reduce driver and passenger injury in some situations, but do not ensure safety and do not protect other road users.

Recommended reading

Queensland Government. (2019). PrepL Supervisor Course. Available at: https://www.qld.gov.au/transport/licensing/getting/learner/prepl/prepl-supervisor-course