Recommendations for a Graduated Licensing System for motorcyclists in Tasmania

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Report documentation

TITLE

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ABSTRACT

This report provides a review of the structure, and possible elements that could be included in, the Graduated Licensing System (GLS) for motorcyclists in Tasmania. The aim is to create a GLS that allows novice riders to gain riding experience while minimising their exposure to risk. GLS elements are evaluated in terms of their demonstrated effectiveness or, if this is unknown, their likely efficacy based on general road safety principles. A model motorcycle GLS is then proposed, incorporating the elements most likely to lead to a safety benefit.

KEYWORDS

Motorcycle, motorcyclist, licensing, graduated licensing, GLS, road safety, countermeasure, novice rider

Summary

The aim of this report was to provide a review of the Tasmanian motorcycle GLS. The focus was on the structure of the GLS and the restrictions placed on riders within each stage (e.g., zero BAC, pillion passenger restrictions).

The current characteristics of each stage (e.g., age of entry, minimum length of tenure) were reviewed for appropriateness, along with other possible elements that could be implemented at the stage in question. For each possible GLS component discussed in the report, consideration was given to the following:

- whether or not Tasmania already incorporates the component in its current GLS,
- research evidence for or against the component,
- best practice models for graduated licensing,
- any discrepancy with the Tasmanian car GLS,
- GLS in other Australian jurisdictions.

On the basis of these considerations, a number of recommendations can be made regarding an updated motorcycle GLS for Tasmania. These recommendations can be summarised in the model presented in Table B, with the current GLS shown in Table A.

STEP 1 Pre-learner	STEP 2 Learner licence	STEP 3 P1	STEP 4 P2	STEP 5 Full unrestricted licence
Minimum age 16 yrs 6 mths Pass the Driver Knowledge Test Pass the Pre-Learner Course	Minimum age 16 yrs 6 mths Display L plates LAMS restricted Automatic motorcycle if tested on one Zero alcohol/drugs Maximum speed 80/km/h Pillion passenger restriction, unless for supervision Lane filtering restriction 4 demerit points per yr Check Ride undertaken at least 28 days before Pre-Provisional Test If never held a full motorcycle licence, must hold learner licence for at least 6 months. Pre-Provisional Test completed to get P1 licence	Minimum age 17 Display red P plates LAMS restricted (unless previous P2 licence) Automatic motorcycle if tested on one Zero alcohol/drugs Maximum speed 80/km/h Pillion passenger restriction Lane filtering restriction 4 demerit points per yr Hold P1 for at least 12 months	Minimum age 18 Display green P plates Automatic motorcycle if tested on one Zero alcohol/drugs Lane filtering restriction 4 demerit points per yr Hold P2 for 2yrs if <23; 12 mths or until 25 if 23-25; 12 mths if >25	Minimum age 20

STEP 1 Pre-learner	STEP 2 Learner licence	STEP 3 P1	STEP 4 P2	STEP 5 Full unrestricted licence
Minimum age 18 yrs	Minimum age 18 yrs	Minimum age 18 yrs 6 mths	Minimum age 19 yrs 6 mths	Minimum age 21 yrs 6 mths
Pass the Driver Knowledge Test	Display L plates	Display red P plates	Display green P plates	
Pass the Pre-Learner Course	LAMS restricted	LAMS restricted	LAMS restricted	
	Automatic motorcycle if tested on one	Automatic motorcycle if tested on one	Automatic motorcycle if tested on one	
	Zero alcohol/drugs	Zero alcohol/drugs	Zero alcohol/drugs	
	Maximum speed 90/km/h	Maximum speed 100/km/h	Mobile phone restriction	
	Pillion passenger restriction	Pillion passenger restriction	Lane filtering restriction	
	Night curfew if <25	Night curfew if < 25 and no P2 or full car licence	4 demerit points per yr	
	No towing	No towing	Hold P2 for 2yrs if <23; 12 mths or until 25 if 23-25; 12 mths if >25	
	Mobile phone restriction	Mobile phone restriction		
	Lane filtering restriction	Lane filtering restriction		
	4 demerit points per yr	4 demerit points per yr		
	Hold learner licence for at least 6 months.	Hold P1 for at least 12 months		
	Check Ride undertaken at least 28 days before Pre-Provisional Test			
	Hazard Perception Test completed to get P1 licence			
	Pre-Provisional Test completed to get P1 licence			

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1   Introduction

It has long been recognised that riders of motorcycles have a substantially higher risk of serious injury or fatal road crashes than other road users in Australia (Johnston, Brooks & Savage, 2008). In Tasmania, motorcyclists comprise an average of around 25% of road fatalities (Tasmanian Government, 2021a). The most recent five-year average for serious injuries is even higher, at 32% (Tasmanian Government, 2021b).

Countermeasures for motorcycle crashes and injuries include targeted infrastructure treatments, improved rider training, advances in motorcycle technology, and protective clothing. Many general road safety interventions, such as reduced speed limits, can also be implemented to reduce motorcycle crash numbers. Another option for *specifically* addressing motorcyclist safety is to improve the licensing system. This will particularly improve safety for novice riders, who are known to have a higher risk of crashes per unit of exposure than more experienced riders (Andrea, 2006; National Safety Council, 2009). Furthermore, if the licensing system incorporates suitable training and encourages appropriate experiential learning, then safety benefits beyond the novice riding stage may also be possible.

1.1   Graduated Licensing Systems (GLS)

The modern approach to driver licensing is what is known as the 'Graduated Licensing System' (GLS). GLS work by imposing restrictions on novice drivers and gradually lifting them as the drivers progress through the different phases of the system. In this way, driving experience is obtained initially in conditions of low risk, with more challenging conditions only encountered once a driver has reached a particular level of experience and maturity.

GLS have proved successful in reducing road crashes among young novice drivers. A review by Senserrick & Williams (2015) determined that the components of a car GLS with the greatest evidence of effectiveness in reducing novice driver crashes were:

- a minimum learner age of 16 years
- a minimum learner period of 12 months
- a minimum provisional age greater than 16 years (with increasing benefits with increasing age)
- night driving restrictions
- peer passenger restrictions, and
- a zero blood alcohol concentration limit.

There was also some evidence of effectiveness for a high number of supervised driving hours during the learner phase, and the requirement for hazard perception tests and exit tests (Senserrick & Williams, 2015).

For motorcycles, there are GLS operating in all Australian jurisdictions but there is variety in the elements that are included in them. All motorcycle GLS in Australia nonetheless follow the best practice model (Christie, 2014) of involving three stages of licensing: learner, intermediate (restricted) and full (unrestricted). There are also nationally consistent requirements in terms of displaying L plates during the learner stage and being required to wear an approved motorcycle helmet. Variations exist, however, in terms of minimum age requirements, minimum periods of time specified for different stages, mandatory training, assessment requirements, and the nature of restrictions in different stages (e.g., a ban on carrying pillion passengers). A full representation of the licensing systems currently operating for motorcyclists across the jurisdictions of Australia is provided in the Appendix.

A recent review of best practice elements for a motorcycle GLS was conducted for Transport for New South Wales. The review concluded that it was better to have an older rather than younger minimum age for entry into the system, that mandatory pre-licence education and training was beneficial, and that there should be combined knowledge and practical entry assessments, including an on-road component (Transport for New South Wales, 2019). Best practice restrictions for both L and P phases include:

- a zero blood alcohol concentration
- restricting high power-to-weight ratio motorcycles
- restricting carriage of pillion passengers
- restricting all mobile phone use
- restricting riding at night

1.2   The current Tasmanian motorcycle GLS

The motorcycle GLS in Tasmania has three stages: learner, provisional and full licence. The provisional stage is also spilt into two sub-stages, P1 and P2.

1.2.1   Learner licence

A prospective motorcyclist in Tasmania becomes eligible to apply for a learner licence at the age of 16 years and 6 months (the corresponding age for drivers of cars is 16 years). In order to get a learner licence, the rider must successfully pass the Motorcycle Driver Knowledge Test, which, at the time of writing, consists of 35 questions (7 compulsory, 3 traffic rules, 15 road rules, 3 road safety and 7 motorcycle-specific), and must the complete the mandatory Pre-Learner Motorcycle Training Course. The latter is a two-day course including both off-road and on-road assessment. It covers basic riding skills, motorcycle operation, road-craft, riding gear, motorcycle knowledge, manoeuvring skills, steering and cornering, emergency braking, and safe riding strategies.

The minimum time period for the learner phase is 6 months. The learner rider must ride a motorcycle that fits the requirements of the Learner Approved Motorcycle Scheme (LAMS); must ride a motorcycle fitted with an automatic transmission if they completed their training on one; must display L plates when riding; must have a zero Blood Alcohol Concentration (BAC); must not lane filter; and cannot ride faster than 80 km/h, regardless of the speed limit of the road. Learners are also restricted from riding with a pillion passenger unless the pillion is a fully licensed motorcyclist and is providing the learner with riding instruction. A learner licence is liable for suspension if the rider accumulates four or more demerit points in a 12-month period, or 12 or more points in a 3-year period.

1.2.2   Provisional period P1

In order to progress to a provisional licence, the rider must complete a Check Ride and then pass the Pre-Provisional Test. The Check Ride must be completed at least 28 days before the Pre-Provisional Test. It includes an expert review of the novice rider's braking, steering and low-speed manoeuvring, and an on-road coaching ride. It is designed to reinforce the riding skills and behaviours taught in the Pre-Learner Course. The latter point is an important one: the Check Ride should not occur too long after the Pre-Learner Course. It also needs to occur, however, after a sufficient time for the learner to have practised and developed the skills learnt in the Pre-Learner Course. The ideal time period is thought to be between three and six months (Duncan McRae, personal communication, February, 2022).

The Pre-Provisional Test is an off-road and on-road assessment of riding competency and safe riding behaviour. It includes assessment of safe riding skills, bike control, knowledge of road rules, and hazard perception. Passing the test allows the novice rider to be granted a P1 licence.

The minimum age for a P1 licence is 17 years. This stage lasts for 12 months. Riders must ride a motorcycle that fits the requirements of the Learner Approved Motorcycle Scheme (LAMS) if they have not previously held a P2 motorcycle licence; must display red P plates when riding; must have a zero Blood Alcohol Concentration (BAC); must not lane filter; and cannot ride faster than 80 km/h, regardless of the speed limit of the road. P1 riders are also restricted from carrying a pillion passenger. A P1 licence is liable for suspension if the rider accumulates four or more demerit points in a 12-month period, or 12 or more points in a 3-year period.

1.2.3   Provisional period P2

Progression from the P1 to P2 stage occurs automatically. The minimum age for a P2 licence is 18 years. The P1 rider must ride a motorcycle fitted with an automatic transmission if they completed their training on one, must display a green P plate, must still have a zero BAC, and must not lane filter. They are no longer restricted to a LAMS motorcycle and are able to carry a pillion passenger as long as the pillion is 8 years of age or older. A P2 licence, like a P1 licence, is liable for suspension if the rider accumulates four or more demerit points in a 12-month period, or 12 or more points in a 3-year period. The minimum period for the P2 stage is dependent on the age of the rider at the time the licence is issued. It is 2 years if the rider is aged under 23; 12 months or until the age of 25 if the rider is aged between 23 and 25; and 12 months if the rider is aged 25 or older.

1.2.4   Full licence

Riders become eligible for a full licence at a minimum age of 20. All restrictions are lifted for the full licence.

1.3   Motorcycle crash statistics for Tasmania

Tasmanian crash data for 2011 to 2020 show that, across this time period, there were 3826 motorcycle riders involved in crashes in Tasmania. Of these, 63 (1.6%) were killed and 692 (18.1%) sustained a serious injury. Fully licensed riders were involved in 1663 of these crashes (43.5%), while riders on a Learner licence were involved in 752 (19.7%), riders on a P1 licence were involved in 302 (7.9%) and riders on a P2 licence were involved in 264 (6.9%)[1].

That novice riders are over-represented in crashes is evident when the crash involvement percentages above are compared to percentages of licences held and motorcycles registered. Using licence numbers for 2016 and motorcycle registrations for the present day (March 2022), it can be seen that learner riders were strongly over-represented in crashes (19.7% of crashes, 3.8% of licences, 4.9% registered motorcycles). P1 riders were also over-represented (7.9% of crashes, 2.9% of licences, 3.2% of registered motorcycles), as were P2 riders (6.9% of crashes, 3.6% of licences, 2.8% of registered motorcycles). Fully licensed riders were under-represented (43.5% of crashes, 89.7% of licences, 89.1% of registered motorcycles).

In regard to age, 94 of the crash involved riders were aged 16 (2.6%), 201 were aged 17 (5.5%), 179 were aged 18 (4.9%) and 155 were aged 19 (4.2%). Therefore, 17.1% of crash-involved motorcyclists over this period were teenagers, with 15.1% of their crashes resulting in fatal or serious injuries.

Crash types were reasonably consistent across different licence groups, with around 30% of all crash-involved motorcyclists involved in 'off path on curve' crashes, and the second and third most common crash types being a combination of 'off path straight' and 'vehicles same direction' for all rider groups.

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[1] The percentages do not sum to 100 as there are other categories of motorcycle licence – restricted, interstate and overseas.

There were differences between licence groups in regard to lighting conditions at the time of the crash, however. While 8.5% of crashes involving fully licensed riders occurred during hours of darkness, the corresponding figures were 18.6% for riders on a learner licence and 18.7% for riders with a P1 licence. There also appeared to be a minor trend toward novices having a higher proportion of crashes during dawn/dusk. Caution is needed in drawing firm conclusions about the reason for the figures above, however, without rider exposure data.

1.4 Aim and structure of this report

The aim of this report is to provide a review of the Tasmanian motorcycle GLS. The focus is on the structure of the GLS and the restrictions placed on riders within each stage (e.g., zero BAC, pillion passenger restrictions). The suite of training programs provided within the GLS (the Motorcycle Driver Knowledge Test, the Pre-Learner Motorcycle Training Course, the Check Ride, and the Pre-Provisional Test) was implemented recently and so is not considered in this report. Furthermore, any consideration of the stages within the GLS is undertaken in the context of the training programs.

The current characteristics of each stage (e.g., age of entry, minimum length of tenure) are reviewed for appropriateness, along with other possible elements that could be implemented at the stage in question. For each possible GLS component discussed in the report, consideration is given to the following:

- whether or not Tasmania already incorporates the component in its current GLS,
- research evidence for or against the component,
- best practice models for graduated licensing,
- any discrepancy with the Tasmanian car GLS,
- GLS in other Australian jurisdictions.

A number of guiding principles need to be followed when evaluating potential GLS components. First, the component should fit with the overall philosophy of GLS. That is, restrictions should be imposed in such a way that riding experience is obtained initially in conditions of low risk, with more challenging conditions only encountered once a rider has reached a particular level of experience and maturity. In this way, any restrictions at a particular stage of the GLS should be imposed to reduce risk at that stage. The lifting of the restriction should occur once the rider has likely developed the skills and maturity to undertake the challenge of riding without that restriction in place.

Second, consideration needs to be given to how the motorcycle GLS compares with the car GLS. It is important to recognise that motorcycling is a considerably more complex and challenging task than driving a car and also involves a much higher risk of casualty crashes. Therefore, any stage within the motorcycle GLS should confer similar or greater restrictions than a comparable stage within the car GLS. Any divergence from this could be viewed as a discrepancy that needs to be addressed in reviewing the motorcycle GLS.

Third, there is value in considering which GLS components are included in the systems implemented in other jurisdictions. This can provide a 'check' on the reasonableness of a particular possible component or policy. If a GLS component has been implemented elsewhere, it indicates a degree of acceptance of that component, while greater justification may be needed for a component that other jurisdictions have decided against implementing.

2   GLS components

The novice rider in Tasmania can apply for a learner licence at the age of 16 years and 6 months. In order to get a learner licence, the rider must successfully pass the Motorcycle Driver Knowledge Test and must the complete the mandatory Pre-Learner Motorcycle Training Course.

2.1   Age of entry

One of the key considerations in any GLS is the age at which a prospective rider enters the system. The age for a learner licence for motorcyclists is 16 years and 6 months, which is 6 months older than the age at which a prospective driver can obtain a learner licence. This, on the face of it, appears to be consistent with the principle of a more restrictive approach to motorcycle licensing than that for driving a car. However, upon obtaining a learner licence, the rider is able to ride unsupervised on public roads. For a novice driver, the earliest age at which this is possible is 17. As outlined in section 1.3 above, this amounts to a discrepancy between the motorcycle and car GLS.

Research has found that younger riders, whether new or fully licensed, have more crashes per distance travelled than older riders, suggesting that age itself, irrespective of experience, is an important determinant of crash risk. A recent example of this is a study that followed over 40,000 motorcyclists in Florida, USA after they had completed their mandatory licence training (Balusu, Mannering & Pinjari, 2020) and found that riders aged under 25, both male and female, had the highest initial crash risk. Experience did lead to a decrease in risk but younger riders still had a higher risk than older riders. Another recent study, using a case control methodology and a sample of motorcycle crashes in California, found decreasing crash risk with increasing age (Wall, Khattak & Khattak, 2018).

An older study with particular relevance to licensing age was conducted in New Zealand by Mullin, Jackson, Langley and Norton (2000). This study assessed various crash risk factors using a population-based case control method. They found that riders older than 25 had less than half the risk of those aged 15 to 19. Greater riding experience had a protective effect in a univariate analysis but, once age and other confounders were controlled for, this effect was no longer evident. The authors concluded that "licensing regulations should continue to emphasise the importance of increased age" (Mullin et al., 2000, p32).

A similar conclusion that a higher licensing age should be a key component of motorcycle licensing systems was reached by Haworth and Mulvihill (2005) in their review of rider training. The recent best practice review of motorcycle GLS published by Transport for NSW also stated that an 'older versus younger minimum age' was beneficial, and that the learner licence should not be available for motorcyclists at a younger age than the minimum provisional driver age (Transport for New South Wales, 2019). Studies on car drivers have also found that a higher licensing age has road safety benefits (Begg & Langley, 2009; Trempel, 2009; Twisk & Stacey, 2007; Williams, 2009; Williams, Chaudhary, Tefft & Tison, 2010).

There is currently variation in the minimum age for learner licences across Australia. The minimum age in Tasmania is younger than that specified in all other jurisdictions except Northern Territory and Western Australia. New South Wales and the ACT both have a minimum age of 16 years and 9 months, Queensland has a minimum age of 17, and both Victoria and South Australia specify an age of 18 years. South Australia was the state that has most recently changed its minimum learner licence age, raising it from 16 to 18.

Recommendation

It would be beneficial to novice rider safety if the minimum age for a learner licence were increased in Tasmania. At a minimum, the learner licence age should be increased to 17, which would make it the same as the age at which novice drivers can drive unsupervised on the road. However, motorcycling is a more complex and challenging task than driving a car and also comes with far greater risks. There would therefore be added benefit in delaying on-road riding further, until the novice rider is older and has reached a greater level of maturity. For this reason, it is recommended that the minimum age for a learner licence in Tasmania be raised to 18, matching the age that applies in Victoria and South Australia. This change will also have implications for other minimum ages within the GLS.

2.2   Minimum tenure period for the learner licence

The minimum tenure period for the learner licence in Tasmania is currently set at 6 months. Within 28 days of a Pre-Provisional Test, the novice rider must undertake a Check Ride, in which an expert reviews the novice rider's skills and takes them through an on-road coaching ride.

The reason for setting minimum tenure periods for the stages of GLS is to give riders "time to accumulate experience and skills over time under GLS conditions without rushing to meet testing requirements" (Austroads, 2014, p25). A recent best practice review of Motorcycle GLS (Transport for NSW, 2019) noted that there was some degree of evidence supporting a longer (95+ days) rather than shorter (<95 days) minimum learner period. The current six-month period for Tasmania fits with this definition of 'longer'. New South Wales, Victoria, Queensland and the ACT all have a shorter minimum learner period of 3 months; the Northern Territory, like Tasmania, specifies a 6-month period; and South Australia has a 12-month learner period.

One of the key considerations for determining an appropriate minimum learner period in the Tasmanian GLS is the role within the system of training. As noted above, a novice rider is expected to undertake a Check Ride within 28 days of their Pre-Provisional Test. Part of the aim of the Check Ride is to reinforce the content of the mandatory Pre-Learner Motorcycle Training Course that riders complete before getting a learner licence. If the learner period is extended beyond six months, there is a risk that there will then be too long a time period elapsed between the pre-learner course and the Check Ride, which will diminish the effectiveness of these two components of the overall training program.

Recommendation

The current minimum tenure for the learner period in the Tasmanian Motorcycle GLS of 6 months should be retained, in order to support the combined effectiveness of the Pre-Learner Motorcycle Training Course and the Check Ride. This six-month period should be in place regardless of previous licences held. With the minimum age of a learner licence set to 18 years, this minimum tenure for the learner period would result in a minimum age for a provisional licence of 18 years and 6 months.

2.3   On-road supervision of learner riders

Currently, in Tasmania, there is no requirement for learner riders to be supervised by a fully licensed motorcyclist while riding on public roads. The main argument in support of the on-road supervision of learner riders is that the first time learners ride on a public road, they are doing so by themselves. Having someone supervising at least some of their early on-road riding would provide a degree of support and guidance. The argument is, effectively, not that on-road supervision is an effective tool for improving riding outcomes but that it is better than letting inexperienced motorcyclists ride alone in traffic on public roads.

Supervision of learner riders is undertaken in Queensland, with the supervisor following a distance behind the novice, either on a motorcycle or in a car, or with the motorcyclist in a sidecar. It is also undertaken in Western Australia, where the supervisor can ride as a pillion passenger, or in a sidecar, or on another motorcycle. It is noteworthy that Western Australia does not require pre-learner training or a practical riding assessment prior to obtaining a learner licence. Queensland requires that riders successfully complete the Q-Ride training program.

The argument against supervised riding is that it is dangerous (e.g., Austroads, 2014). This danger is related to distraction for both the novice and the supervisor. The novice needs to take note of the supervisor and respond to their directions, which could distract from the primary riding task. Similarly, the supervisor will need to monitor the novice and so will themselves also be distracted from the primary task of riding, which could increase risk.

Recommendation

On-road supervision of all learner riders is potentially dangerous through increases in riding exposure and rider distraction, both for the novice and the supervisor. Riders in Tasmania already need to demonstrate basic competency in the Pre-Learner Motorcycle Training Course prior to riding on public roads and also participate in a Check Ride. Without any evidence of a benefit, there is no reason for Tasmania to introduce supervision of learner riders into the GLS.

2.4   Minimum hours of riding experience

Another means of ensuring that riders achieve a level of riding experience necessary to master skills sufficiently well for the lifting of restrictions as they progress through the GLS is to specify a minimum number of hours of riding during the learner phase. This is commonly done through the use of log books in car GLS in Australia.

There are reasons against requiring this for the learner phase of a motorcycle GLS, however. One reason is that, during the learner phase of a car GLS, the novice is being supervised by a licensed driver. In Australia, only Western Australia and Queensland require this for motorcyclists, and, as noted above, it not being recommended in this report for Tasmania. Having a supervisor allows for a 'quality check' on log book data and increases the likelihood that the novice has completed the level of on-road experience required. Without supervision, the efficacy of a minimum riding hours requirement would be much lower.

Another issue is that a particular level of riding experience may be sufficient for some but not others. Any level specified will be too little for some riders and so, by specifying such a level, the rider may assume that they have undertaken sufficient practice to apply for progress in the GLS when they still need longer in the learner stage. There is a risk that some riders will be encouraged by such specifications to progress too quickly through the GLS.

Recommendation

Tasmania currently does not require a minimum number of hours of riding during the learner phase for the GLS. This requirement should not be introduced.

2.5   Age of entry and minimum tenure for provisional periods

The minimum age for a P1 licence in Tasmania is currently set at 17 years. This stage lasts for 12 months. Progression from the P1 to P2 stage occurs automatically. The minimum age for a P2 licence is currently 18 years. The minimum period for the P2 stage is dependent on the age of the rider. It is 2

years if the rider is aged under 23; 12 months or until the age of 25 if the rider is aged between 23 and 25; and 12 months if the rider is aged 25 or older. Riders become eligible for a full licence at a minimum age of 20 (i.e., if they obtain a P1 licence at 17 and P2 licence at 18). In Section 2.1 above, it was recommended that the minimum age for a learner licence be increased to 18, while in Section 2.2., it was recommended that the minimum tenure for a learner licence be kept at the current 6 months. These changes have direct implications for the age requirements of the two provisional licence stages.

A recent report with relevance to this issue is a review of changes to the motorcycle GLS in New South Wales (Transport for New South Wales, 2019). In 2009, NSW introduced an additional 2-year minimum P2 licence period for riders under the age of 25. Prior to that, riders could obtain a full licence after just one year under provisional licence restrictions. An evaluation found declines in quarterly crash trends for P2 riders compared to pre-GLS riders in the first two years on a full licence (i.e., a comparison of crash rates for riders under provisional licence restrictions versus an equivalent group of riders who had progressed to an unrestricted licence). This demonstrates the safety benefit of the additional provisional licence period. Furthermore, the evaluation found declines in crash rates for fully licensed riders, which the authors suggested could be due to a flow-on effect of fully licensed riders having had additional experience due to the two years of the P2 licence (plus the removal of inexperienced riders from the cohort) (Transport for New South Wales, 2019).

Other jurisdictions in Australia have either a 2-year or 3-year provisional period, except Victoria, where a rider under the age of 21 who does not hold a driver's licence must hold a provisional motorcycle licence for four years. Tasmania's current minimum 3-year period (1 year P1 and 2 years P2) is commensurate with approaches elsewhere in Australia.

Recommendation

Tasmania should maintain its current requirement for one year on a P1 licence and two years on a P2 licence. This overall three-year period gives novice riders sufficient time to gain on-road experience while risks are minimised by restrictions. If the suggested minimum learner period of 18 is adopted and the 6-month learner licence tenure retained, then the minimum age for getting a P1 licence would be 18 years and 6 months. This would mean a minimum age of 19 years and 6 months for getting a P2 licence and a minimum age for a full licence of 21 years and 6 months. As a young age is known to have a strong effect on risk, the current variations in the time period for the P2 licence (12 months or until the age of 25 if the rider is aged between 23 and 25; and 12 months if the rider is aged 25 or older) can be retained.

2.6   Hazard perception test

A number of Australian jurisdictions use a Hazard Perception Test (HPT) within their GLS for car drivers. These computer-administered tests assess the driver's ability to detect hazards in the road and traffic environment in a timely fashion and respond to them appropriately. On March 7, 2022, Tasmania introduced the requirement for learner car drivers to pass a computer-administered HPT before sitting the practical driving assessment to progress to a P1 licence. Various HPT measures have been found to be linked to crash risk (Boufous, Ivers, Senserrick & Stevenson, 2011; Drummond, 2000; McKenna & Crick, 1991; McKenna & Horswill, 1999; Quimby, Maycock, Dixon & Wall, 1986).

Less use is made of hazard perception testing in motorcycle licensing systems, especially if the rider already has a driver licence. Wallace, Haworth and Regan (2005) noted that car-based HPTs are unlikely to be suitable for motorcyclists. Indeed, research undertaken by the Centre for Automotive Safety Research for Austroads found that motorcyclist crash patterns and the hazards associated with them differ from those of novice car drivers. A review of research into HPTs by Moran, Bennett and Prabhakharan (2019) found that HPTs incorporating a temporal measure were able to discriminate

between experienced and novice motorcyclists. The authors suggested that HPTs for motorcyclists should be incorporated into licensing systems, and that the motorcycle HPTs should use scenarios from a motorcyclist's perspective and should incorporate a temporal measure.

Currently, both Queensland and Western Australia require the successful completion of a motorcycle-specific HPT before obtaining a provisional licence, while a HPT for motorcyclists is under consideration for the GLS in South Australia.

Recommendation

Tasmania should add successful completion of a motorcycle-specific HPT to the requirements for obtaining a P1 licence. A motorcycle-specific HPT has been developed by the Centre for Automotive Safety Research on behalf of Austroads, which uses clips from the perspective of a motorcyclist and which uses temporal measures of performance, as recommended by Moran et al. (2019). This would therefore be suitable to use in the Tasmanian motorcycle GLS. It is also the motorcycle-specific version of the car HPT now being used in Tasmania. The most suitable timing for the HPT would be between the Check Ride and the Pre-Provisional Test. The Check Ride assesses whether the content of the Pre-Learner Course has been retained and whether riding ability is consistent with readiness for the Pre-Provisional Test, while the latter is the on-road assessment that confers qualification for a P1 Licence. The HPT is a focused assessment of a specific, important ability that is necessary for safe riding and, if successfully passed, indicates suitability for undertaking the Pre-Provisional Test.

2.7 Rider restrictions during the GLS

2.7.1 Display of distinctive L or P plates

The use of distinctive ('L', 'P') plates identifies novice riders on restricted licences to police. This should serve to encourage adherence to licensing restrictions, especially those that can be determined on visual inspection (e.g., restrictions on pillion passengers). Tasmania requires the display of particular plates for the learner and both P1 (red) and P2 (green) phases of the car GLS. This is consistent with almost all jurisdictions in Australia.

Recommendation

Tasmania should maintain the requirement for novice riders to display distinctive L or P plates during the relevant stages of the motorcycle GLS.

2.7.2 No carriage of pillion passengers

Most Australian jurisdictions restrict riders on a learner licence from carrying a pillion passenger. Tasmania and Western Australia, where learner riders are permitted to have a pillion passenger supervising them, are exceptions. For riders with a provisional licence, most jurisdictions have pillion passenger restrictions initially (e.g., P1 or first 12 months) before these are dropped during later stages (e.g., P2 or after 12 months).

The reason for pillion passenger restrictions is that carrying a passenger makes the task of balancing a motorcycle more difficult (e.g., Harrup & Wilson, 1982). It may also result in distraction and encouragement of risk taking. Although discussions of pillion passengers often focus on the risk of crashing, there are also greater injury risks in the event of a crash (e.g., Quddus et al., 2002). It has been found that pillion passengers are more likely than riders to be killed or injured in crashes (Christie & Harrison, 2002), especially in particular crash types, such as head-on collisions (Zhao et al., 2011). The best practice review of motorcycle GLS conducted for Transport for New South Wales nominated

restricting the carriage of pillion passengers during the learner and provisional licensing stages as an element of best practice (Transport for New South Wales, 2019).

Recommendation

The Tasmanian GLS should be amended to restrict learner riders from carrying pillion passengers, removing the current exemption for passengers who are providing instruction to the novice rider. The existing pillion passenger restriction for P1 riders should be retained. The permission for P2 riders to carry pillion passengers is consistent with most other jurisdictions and can be retained.

2.7.3   Lower demerit point threshold for licence disqualification

The specification of a lower demerit point threshold for licence disqualification within a GLS is designed to increase compliance with road laws and licence conditions. The reasoning is that riders will be aware that being detected committing traffic offences will quickly result in the loss of licence, and so riders will avoid deliberate offending (e.g., speeding), thus increasing their safety as they accrue riding experience.

All jurisdictions impose some kind of demerit point threshold for riders within the GLS, with few varying the threshold between learner and provisional riders. Tasmania's threshold of four points in a 12-month period is typical of Australian GLS requirements.

Recommendation

Tasmania should maintain the demerit point threshold of four points per 12-month period throughout the motorcycle GLS. Ideally, this threshold would apply to the motorcycle licence regardless of any other licences held by the novice rider.

2.7.4   Night-time curfew

It is a well-established finding that night-time is a risky time for motorcycle riding (e.g., Blackman & Haworth, 2013; Cunto & Ferreira, 2017; Doan & Hobday, 2019; Islam & Brown, 2017; Jou et al., 2012; Li, Lui, Zhang, Parrish & Jones, 2021; Nguyen et al., 2021; Quddus et al., 2002; Shaheed et al., 2013). A recent Australian study found that the odds of a more severe injury outcome were 32% higher in dark conditions relative to light, and 12% higher in dawn/dusk conditions relative to light (Budd et al., 2018). A UK study found a higher crash risk for motorcyclists in dark versus light conditions, especially for multiple vehicle collisions, crashes on low-speed roads, crashes at T-junctions and crashes at Give Way sign-controlled intersections (Robbins & Fotios, 2020). These studies accord with a higher crash risk in general associated with hours of darkness (see Johansson, Wanvik & Elvik, 2009, for a well-controlled study). The higher risk for motorcyclists at night is likely due to a number of factors, including sleepiness, higher levels of alcohol use by riders and other motorists, and lower levels of visibility, both in terms of the motorcyclist being seen and the motorcyclist detecting key aspects of the road traffic environment.

Novice riders, specifically, are known to have higher crash rates at night (VicRoads, 2010; WA Department of Transport, 2010) and Tasmanian figures for 2011-2020 are consistent with this. For riders with a full licence, 13.2% of crashes occurred either in hours of darkness or during dusk/dawn. The comparable figures for novices were 25.1% for novices, 28.1% for P1 riders and 19.7% for P2 riders.

Given these risks, a night-time curfew for novice motorcyclists is a potential countermeasure for novice rider crashes. The best practice review of motorcycle GLS prepared for Transport for New South Wales identified restricting riding at night as being a 'best practice' GLS component for the L and P phases (Transport for New South Wales, 2019). Senserrick and Williams (2015) identified night-time driving restrictions as one of the car GLS components with clear evidence for effectiveness in reducing novice driver crashes.

Currently, there are two Australian jurisdictions which have a night-time curfew for novice motorcyclists. The South Australian GLS restricts learner licence holders from riding between midnight and 5am if aged under 25. The same restrictions apply to riders with a provisional licence if they are aged under 25 and do not hold a P2 or full driver's licence. In Western Australia, riders with a P1 licence are restricted from riding between midnight and 5am unless they have held another licence for two years or more. WA does not have a learner rider night-time curfew as their learner riders are supervised at all times and a certain amount of supervised night-time riding is mandated. In both jurisdictions, riders can apply for exemptions from the curfews.

Recommendation: Tasmania should adopt night curfews for novice riders similar to those in place in South Australia. That is, those on a learner licence should be restricted from riding between midnight and 5am if aged under 25. The same restrictions should apply to those with a P1 licence if aged under 25 and not holding a P2 or full driver licence. As is the case in Western Australia, the night curfews for Tasmania novice riders should be lifted at the P2 phase.

2.7.5 Zero blood alcohol concentration

That drink driving increases crash risk is very well known and there is also extensive evidence that alcohol is a risk factor for motorcycle crashes and higher injury severity (e.g., Faried et al., 2017; Jung et al., 2013; Kasantikul et al., 2005; Li et al., 2021; Moskal et al., 2012; Rifaat et al., 2012; Savolainen & Mannering, 2007). A recent study by Vu, Nguyen, Nuyen & Khuat (2020) examined the effects of low levels of BAC on motorcycle simulator performance among novice and experienced motorcyclists. The study included measures of riding speed, lateral overtaking distance, brake reaction time, acceleration from a green light, deceleration at a red light, and frequency of lane changes; rider BAC levels included 0.00, 0.02 and 0.05 g/100ml. Increases in BAC had a negative effect on all measures and there was evidence for a greater effect on novices.

Currently, all jurisdictions in Australia require a zero BAC for novice riders at both the learner and provisional licensing phases. In Western Australia, motorcyclists with a provisional licence do not need to have a zero BAC if they have held another driver licence for two years beyond the learner phase. The best practice review of motorcycle GLS prepared for Transport for New South Wales identified requiring a zero BAC as being a 'best practice' GLS component for the L and P phases (Transport for New South Wales, 2019).

Recommendation

The requirement that all novice motorcyclists in Tasmania (learner and provisional) have a zero blood alcohol concentration should be retained. This requirement should be applied regardless of any other licences held.

2.7.6 No towing of trailers

Christie (Austroads, 2014) argues that towing of trailers is likely to confer additional risk on an inexperienced, novice rider and should be disallowed, adding that few riders, even on a full licence, use their motorcycle for towing, and so such a restriction will not disadvantage many novice motorcyclists. VicRoads (2010) report that there is very little research on the risk of towing but argue that towing would place 'additional demands' on novices.

Towing restrictions currently apply in the ACT (L and first 12 months of P licence), New South Wales (L and P1), Victoria (L and P) and South Australia (L only).

Recommendation

Given that towing may increase risk for novice riders and that few riders would be negatively affected by prohibition of towing, towing restrictions should be introduced for learner riders and those with a P1 licence in Tasmania.

2.7.7 Automatic transmission restriction for novice riders

Motorcycles fitted with a manual transmission are more complex to operate than motorcycles with automatic gears. Coordinating the release of the clutch and throttle when riding a manual motorcycle requires additional mental effort, which could remove cognitive resources from the task of attending to, and responding to, the road and traffic environment. For this reason, it could be argued that novice riders should not be permitted to ride motorcycles with a manual transmission unless that is the type of motorcycle they rode when passing relevant licensing assessments.

An OECD working group, in its set of recommendations for novice rider testing, recommended that any testing undertaken as part of a GLS should be in accordance with the motorcycle that the applicants will be authorised to ride (OECD/ITF, 2015, p99). This means that a rider would need to demonstrate competence on a manual motorcycle before being licensed to ride one.

Learners are required to ride automatic motorcycles in New South Wales and Western Australia, and are required to do so if they qualified for their learner licence on an automatic motorcycle in the ACT, Tasmania, South Australia and Victoria. The latter two states adopted this restriction in the latest iterations of their motorcycle GLSs. All jurisdictions except the Northern Territory and Queensland require riders with a provisional licence to ride an automatic motorcycle if they were assessed on one to obtain their Ps. In Tasmania, riders who have qualified for a learner licence or provisional licence with an automatic motorcycle are restricted to riding one but can take steps to have this condition removed. Those on a learner licence can repeat the second day of the Pre-Learner Motorcycle Course on a motorcycle fitted with a manual transmission. Those with a provisional or full licence can complete a Check Ride using a manual motorcycle.

Recommendation

There is a sound theoretical basis for requiring that a rider demonstrate competency on a manual motorcycle before being licensed to ride one. It is recommended that Tasmania retain its current restrictions for novice riders who have qualified for a learner or provisional licence using a motorcycle with an automatic transmission.

2.7.8 No use of mobile phone or other communication devices

In many jurisdictions, car drivers without a full licence are not even allowed to use *hands-free* mobile phones while driving. This is in recognition of the well-established finding that mobile phone use or the use of other similar communication devices can interfere with the safe performance of the driving or riding task. Impairments in performance of driving or driving-related tasks have been found for both hand-held and hands-free phones (e.g., Caird et al., 2008, Ishigami & Klein, 2009), and texting (e.g., Hosking, Young & Regan, 2009, Owens, McLaughlin & Sudweeks, 2011). There has been little research examining mobile phone use and motorcycling, although some studies have noted mobile phone use at the time of the crash among hospitalised riders (Doan & Hobday, 2019) and a higher risk of crash involvement being associated with self-reported phone use while riding (Truong, Nguyen & de Gruyter, 2019).

All jurisdictions, with the exception of Western Australia, have a ban on mobile phone use for novice riders during both the learner and provisional GLS phases, although exemptions for hands free phone use are common. Tasmania has exemptions for hands free phone use at both the learner and provisional stages, while Queensland permits hands free phone use for provisional riders. The best practice review of motorcycle GLS prepared for Transport for New South Wales identified a ban on all mobile phone use by novice riders as being a 'best practice' GLS component for the L and P phases (Transport for New South Wales, 2019).

The exemption for hands free mobile phone use for novice motorcyclists in Tasmania mean that they have the same rules as fully licenced riders and car drivers. Novice car drivers, in contrast, are not allowed hands free phone use. Novice drivers can set the phone to play music or operate a GPS prior to driving but, once driving has commenced, they are not permitted to interact with the phone at all. This represents a clear discrepancy between the car and motorcycle GLS.

Recommendation

The permission to use a mobile phone in hands-free mode for novice riders in Tasmania is inconsistent with evidence indicating that hands free phone use while driving poses a similar risk to hand-held phone use. It also contradicts the GLS for drivers, according to which novice drivers are not permitted any mobile phone use at all. Tasmania should adopt the same restrictions as most other states, with no mobile phone use permitted for learner or provisional riders, with the ban on use extending to hands free operation.

2.7.9   Maximum speed restrictions

A number of jurisdictions apply maximum speed restrictions to novice riders as part of the GLS. These restrictions set a maximum speed at which the rider can travel, regardless of the posted speed limit of the road. Such restrictions are imposed because of the well-known link between travel speed and crash risk. There is not a great deal of research on this measure (Transport for New South Wales, 2014), especially in regard to motorcyclists.

Senserrick and Williams (2015), in discussing GLS for cars, argued that such restrictions create speed differentials between different vehicles on the road and that this introduces risk. The risk involves vehicles that are able to travel faster engaging in aggressive driving or unsafe overtaking when encountering a slower vehicle on a highway. Other authors have also argued that speed differentials resulting from such policies are dangerous (Austroads, 2014).

For learner riders in Australia, speed limit restrictions include 100 km/h for South Australia and Western Australia, 90 km/h for New South Wales, and 80 km/h for Tasmania. No restrictions apply in the ACT, Queensland or Victoria. For provisionally licensed riders, there is a restriction to 100 km/h, unless the rider holds a full driver licence, in South Australia and the Northern Territory; 90 km/h for P1 riders and 100 km/h for P2 riders in New South Wales; and 80 km/h for P1 riders in Tasmania, with no restriction for P2 riders. No restrictions are in place for riders with a provisional licence in the ACT, Queensland, Victoria and Western Australia.

In Tasmania, maximum speed restrictions are in place for novice *drivers*, with limits of 90 km/h for learner drivers, 100 km/h for P1 drivers, and no restriction for P2 drivers. These limits were set in 2020 following a review of the car GLS.

Recommendation

There is little evidence to support the use of maximum speed restrictions for novice drivers or riders. As the recent review of the Tasmanian GLS determined that speed restrictions should be in place for learner drivers and those with a P1 licence, aligning the motorcycle GLS with the car GLS would require speed restrictions for novice riders also, especially given the higher risk associated with motorcycle riding. It is recommended that the speed restrictions for the motorcycle GLS be altered to match those required under the car GLS: limits of 90 km/h for learner riders, 100 km/h for P1 riders, and no restriction for P2 riders.

2.7.10 Lane filtering restrictions

Lane filtering refers to motorcyclists riding through the centre of stationary lanes of traffic, usually on the approach to intersections controlled by traffic lights. The small size of motorcycles makes it possible for them to do this. There is little in the way of evidence for the risks associated with lane filtering, as most studies making any reference to crashes lack suitable control or exposure data.

A study was conducted in Australia by Mulvihill et al. (2013) in which verbal protocols provided by motorcyclists were analysed, including protocols produced while lane filtering. The content analysis revealed that motorcyclists who filtered tended to focus less of their attention on perception of surrounding hazards and traffic behaviour than motorcyclists who did not filter, which one may surmise would potentially increase crash risk.

A trial was undertaken in NSW of lane filtering using an isolated section of the northern Sydney CBD (Transport for New South Wales, 2014). A study was conducted into the effects of the trial on congestion, behaviour, attitudes and safety. One issue identified in video footage collected during the trial was motorcycles that had filtered moving into the pedestrian crossing at intersections. The authors of the associated report argued that the biggest risk from filtering was to pedestrians, especially those crossing through stationary traffic. It was recommended that lane filtering be permitted but that lane filtering motorcycles be restricted to 30 km/h, to minimise the risk of serious injury to pedestrians. In terms of travel-related variables, there was a small time saving for motorcycles but no effect on other traffic, due to the relatively small motorcycle numbers (motorcycles comprised 4% of traffic but only a quarter lane filtered, meaning a change in mobility for 1% of vehicles) (Transport for New South Wales, 2014).

A trial was also conducted of lane filtering in the ACT, which was evaluated in terms of crash numbers and community attitudes (ACT Government, 2018). The study found no change in the rate of rear end or lane change crashes but an increase in property-damage-only side swipe crashes. The latter were taken by the authors to be a proxy for lane filtering crashes, as lane filtering status at the time of a crash was not available in the data. Overall motorcycle crash numbers did not increase (ACT Government, 2018).

Currently, all Australian jurisdictions ban lane filtering for riders with learner licences. There are also bans for riders with provisional licences, except in Western Australia and Victoria, and in South Australia for riders who have held a P licence for more than 12 months.

Recommendation

There may be a degree of risk associated with lane filtering and bans exist for novice riders in most Australian jurisdictions. It would be prudent for Tasmania to retain its ban on lane filtering for all novice riders.

2.7.11 Enhanced visibility requirements

A sizeable proportion of motorcycle crashes are multiple vehicle collisions in which the driver of a passenger vehicle fails to give way to the motorcyclist. One of the reasons suggested for the tendency for motorcyclists to be struck in such collisions is their low levels of conspicuity. The lower conspicuity of motorcyclists could play a role in other types of multiple vehicle collision as well. In Tasmania from 2011 to 2020, the proportion of novice motorcycle crashes comprised by the types, 'vehicles adjacent', 'vehicle opposite' or 'vehicle same direction' was around 30%.

A study conducted in New Zealand by Wells et al (2004) found that riders wearing highly conspicuous clothing had a 37% lower risk of being in an injury crash than other riders. Another case control study of motorcycle crashes, this time in California, found that riders with dark clothing on their upper body had an odds ratio of crash involvement of 3.87 (Wali, Khattak & Khattak, 2018), while a follow-up analysis of injury severity also found a protective effect of high conspicuity clothing (Wali, Khattak & Ahmad, 2019). An important point to remember about such studies is that clothing is self-selected. It could be that certain types of riders choose to wear highly conspicuous clothing and that other rider characteristics associated with clothing choice may be playing a role in any elevated crash risks. A case control study in Victoria, meanwhile, did not identify an effect on risk associated with lower conspicuity clothing (Budd et al., 2018).

Currently, the only jurisdiction in Australia where high visibility clothing is mandated is Victoria, where approved vests must be worn by riders on a learner licence. The best practice review of motorcycle GLS prepared for Transport for New South Wales identified that there was some evidence indicative of a benefit for increasing motorcyclist conspicuity but did not nominate it as a best practice GLS component (Transport for New South Wales, 2019). A report by CASR (Baldock, 2018) made the recommendation that high visibility clothing be required for learner riders in South Australia but, when the new motorcycle GLS was introduced in 2021, this requirement was not included. The high visibility requirement for learners in Victoria has been contentious. It has been reported that more experienced riders have ceased wearing high visibility vests because they do not wish to be mistaken for a novice and that there are also high levels of non-compliance (Duncan McRae, personal communication, February 2022). A recent study using focus groups of motorcyclists in the USA found that many riders claim high visibility clothing does not fit their 'riding culture' and object to its appearance (Jenness, Yahoodik, Benedick & De Leonardis, 2019).

Recommendation

Higher visibility clothing is likely to provide a safety benefit for those who choose to wear it but mandating it is likely to be contentious and could have unintended effects, as in Victoria. It is not recommended for inclusion as a requirement in the Tasmanian GLS. That riders should take steps to improve their conspicuity is something that could still be communicated to novice riders through their mandatory training programs.

2.7.12 Mandatory protective clothing requirements

One means of reducing injuries resulting from motorcycle crashes is the use of personal protective equipment, including helmets and protective clothing. The latter includes specially designed jackets, pants, gloves and boots. Full body protective outfits are also available. Although helmets are mandatory throughout Australia, riders are able to choose the level of protection they wear on other parts of the body.

Considerable research has focused on the benefits of protective clothing for motorcyclists and how to optimise these benefits (Afquir, Melot, Ndiaye, Hammad, Martin & Arnoux, 2020; Albanese et al., 2017;

de Rome, 2019; de Rome & Brown, 2016; Hurren, de Rome, Nuthula & Wang, 2016; Meredith, Clarke, Fitzharris, Baldock, de Rome & Brown, 2015; Meredith et al, 2017; Wu, Hours, Ndiaye, Coquillat & Martin, 2019). The general consensus of research into protective clothing is that it is effective for mitigating abrasions and lacerations but not as effective against more serious injuries such as fractures (e.g., Wu et al., 2019). Recent research by de Rome (2019) also found that wearing thermally inefficient protective clothing in hot conditions could impair motorcyclists' functioning and performance. Issues associated with hot weather may not be as significant an issue in Tasmania as it is in some other parts of Australia.

A testing program (MotoCAP) has been set up to assess the level of protection provided by motorcycle clothing available in Australia and New Zealand. The associated website (www.motocap.com.au) provides star ratings for motorcycle clothing according to three safety factors: impact abrasion resistance, seam strength (burst), and impact energy absorption.

Currently, no jurisdictions in Australia require the wearing of protective clothing at any stage of the GLS. It is notable that the current training courses for novice riders include content regarding protective clothing but that riders attending practical training sessions (including Check Rides and Pre-Provisional tests) are only required to wear 'full coverage' clothing (e.g., long pants) and 'sturdy' shoes (see www.ajltraining.com.au).

Recommendation

Helmets are known to reduce the risk of fatal and serious injuries and so have been made mandatory for all motorcyclists across all jurisdictions of Australia (the requirement to wear a helmet that meets relevant Australian or European standards is covered by the *Tasmanian Road Rules 2019*). Protective clothing, however, chiefly prevents or mitigates less serious injuries. Items of clothing are also not covered by standards in the same way as helmets. Although there are star ratings available for some items on the MotoCAP website, this does not cover all available brands. It would be a difficult restriction to enforce. Protective clothing is not mandated in any other Australian jurisdictions; nor is it required for practical training courses and assessments undertaken during the Tasmanian GLS. Although the use of protective clothing by motorcyclists is advisable and should continue to be discussed during the pre-learner course, it is not recommended to become mandatory for novice riders in Tasmania during the GLS.

2.7.13 Learner Approved Motorcycle Scheme

The Learner Approved Motorcycle Scheme (LAMS) involves imposing limits on the power to weight ratio for motorcycles ridden by novice riders, in order to reduce the crash risk for this group. There is a national list of approved motorcycles maintained by Transport for NSW that most jurisdictions covered by Austroads conform with, and the specified power to weight ratio governing the list is 150 kilowatts per tonne. Most motorcycles with an engine capacity of less than 260cc and all motorcycles built before 1960 with an engine capacity of less than 660cc are approved under the scheme, as are all electric powered motorcycles.

Excluded from the list are motorcycles built after 1960 with an engine capacity of 660cc, other motorcycles with a power to weight ratio of more than 150kw/t, and a small number of other specific motorcycles identified as high risk. Riders who modify a LAMS approved motorcycle in such a way that its power to weight ratio is increased render the motorcycle non-compliant.

In regard to evaluation of the scheme, the best evidence comes from an analysis of Compulsory Third Party claims data in Queensland, which revealed that the claims costs per LAMS motorcycle are considerably lower than those per non-LAMS motorcycle, based on the average claims cost per crash

and the risk of being involved in a crash (Haworth & Debnath, 2014). It is also well-established that sports motorcycles, which typically have a high power to weight ratio, are associated with a higher crash risk than other motorcycle types (Brown et al., 2015; Budd et al., 2018; Morris, 2009; Teoh & Campbell, 2010) and that injury severity tends to be higher for crashes involving a high power to weight ratio (Budd et al., 2018; de Lapparent, 2006; Quddus et al., 2002). The recent Australian study by Budd et al. (2018) reported that a 150 kW/t motorcycle had an 8.7% higher odds of an injury crash and 12.2% higher odds of a serious injury crash than a 50 kW/t motorcycle, after adjustment for type and engine capacity.

Similarly to a point made in the earlier section on rider conspicuity, it is important to note that motorcycle types are self-selected. Those who choose to ride a sports motorcycle or a motorcycle with a higher power to weight ratio may be those more likely to ride in a particular way that affects crash risk. The effects of exposure are also difficult to account for in such studies. Nonetheless, the results above are consistent with arguments for supporting LAMS.

All Australian jurisdictions require learner riders to use a LAMS motorcycle. At the provisional licence stage, the same applies, except that Tasmania does not require a LAMS motorcycle for P2 riders, or those on a P1 licence who have previously held a P2 licence, and the ACT only requires a LAMS motorcycle for the first 12 months of the provisional period. The best practice review of motorcycle GLS prepared for Transport for New South Wales identified a restriction on high power to weight vehicles for novice riders as being a 'best practice' GLS component for the L and P phases (Transport for New South Wales, 2019).

Recommendation

Tasmania should retain the requirement for a LAMS motorcycle for the learner and P1 phases of its GLS. It should also harmonise with most other Australian jurisdictions by also requiring a LAMS motorcycle at the P2 stage. At the time of writing, Austroads is conducting a review of LAMS in Australia and New Zealand. Tasmania should note any possible implications for the LAMS system arising from that review.

3   Summary and conclusions

It has long been recognised that riders of motorcycles have a substantially higher risk of serious injury or fatal road crashes than other road users in Australia. In Tasmania, motorcyclists comprise an average of around 25% of road fatalities. The most recent five-year average for serious injuries is even higher, at 32%. Novice riders, and especially those with a learner licence, are over-represented in serious crashes on a per-licence and per-registered motorcycle basis.

One option for addressing motorcyclist safety is to improve the licensing system. This will particularly improve safety for novice riders, who are known to have a higher risk of crashes per unit of exposure than more experienced riders. Furthermore, if the licensing system incorporates suitable training and encourages appropriate experiential learning, then safety benefits beyond the novice riding stage may also be possible.

The modern approach to driver licensing is what is known as the 'Graduated Licensing System' (GLS). GLS work by imposing restrictions on novice drivers and gradually lifting them as the drivers progress through the different phases of the system. In this way, driving experience is obtained initially in conditions of low risk, with more challenging conditions only encountered once a driver has reached a particular level of experience and maturity.

The aim of this report was to provide a review of the Tasmanian motorcycle GLS. The focus was on the structure of the GLS and the restrictions placed on riders within each stage (e.g., zero BAC, pillion passenger restrictions).

The current characteristics of each stage (e.g., age of entry, minimum length of tenure) were reviewed for appropriateness, along with other possible elements that could be implemented at the stage in question. For each possible GLS component discussed in the report, consideration was given to the following:

- whether or not Tasmania already incorporates the component in its current GLS,
- research evidence for or against the component,
- best practice models for graduated licensing,
- any discrepancy with the Tasmanian car GLS,
- GLS in other Australian jurisdictions.

On the basis of these considerations, a number of recommendations can be made regarding an updated motorcycle GLS for Tasmania. These recommendations can be summarised in the model presented in Table 3.2, with the current GLS shown above it in Table 3.1.

Table 3.1
The current Tasmanian motorcycle GLS

STEP 1 Pre-learner	STEP 2 Learner licence	STEP 3 P1	STEP 4 P2	STEP 5 Full unrestricted licence
Minimum age 16 yrs 6 mths Pass the Driver Knowledge Test Pass the Pre-Learner Course	Minimum age 16 yrs 6 mths Display L plates LAMS restricted Automatic motorcycle if tested on one Zero alcohol/drugs Maximum speed 80/km/h Pillion passenger restriction, unless for supervision Lane filtering restriction 4 demerit points per yr Check Ride undertaken at least 28 days before Pre-Provisional Test If never held a full motorcycle licence, must hold learner licence for at least 6 months. Pre-Provisional Test completed to get P1 licence	Minimum age 17 Display red P plates LAMS restricted (unless previous P2 licence) Automatic motorcycle if tested on one Zero alcohol/drugs Maximum speed 80/km/h Pillion passenger restriction Lane filtering restriction 4 demerit points per yr Hold P1 for at least 12 months	Minimum age 18 Display green P plates Automatic motorcycle if tested on one Zero alcohol/drugs Lane filtering restriction 4 demerit points per yr Hold P2 for 2yrs if <23; 12 mths or until 25 if 23-25; 12 mths if >25	Minimum age 20

Table 3.2
The proposed Tasmanian motorcycle GLS

STEP 1 Pre-learner	STEP 2 Learner licence	STEP 3 P1	STEP 4 P2	STEP 5 Full unrestricted licence
Minimum age 18 yrs	Minimum age 18 yrs	Minimum age 18 yrs 6 mths	Minimum age 19 yrs 6 mths	Minimum age 21 yrs 6 mths
Pass the Driver Knowledge Test	Display L plates	Display red P plates	Display green P plates	
Pass the Pre-Learner Course	LAMS restricted	LAMS restricted	LAMS restricted	
	Automatic motorcycle if tested on one	Automatic motorcycle if tested on one	Automatic motorcycle if tested on one	
	Zero alcohol/drugs	Zero alcohol/drugs	Zero alcohol/drugs	
	Maximum speed 90/km/h	Maximum speed 100/km/h	Mobile phone restriction	
	Pillion passenger restriction	Pillion passenger restriction	Lane filtering restriction	
	Night curfew if <25	Night curfew if < 25 and no P2 or full car licence	4 demerit points per yr	
	No towing	No towing	Hold P2 for 2yrs if <23; 12 mths or until 25 if 23-25; 12 mths if >25	
	Mobile phone restriction	Mobile phone restriction		
	Lane filtering restriction	Lane filtering restriction		
	4 demerit points per yr	4 demerit points per yr		
	Hold learner licence for at least 6 months.	Hold P1 for at least 12 months		
	Check Ride undertaken at least 28 days before Pre-Provisional Test			
	Hazard Perception Test completed to get P1 licence			
	Pre-Provisional Test completed to get P1 licence			

As can be seen in Table 1b, the minimum age for each stage would be older by 18 months in the recommended GLS, on account of the older minimum age of 18 years for a learner licence. Riders with a learner licence would also have a night curfew (12-5am) if aged under 25, would be restricted from carrying a pillion passenger (no longer an exemption for a supervisor), would now be banned from any phone use while riding, and would now be banned from towing. The maximum speed restriction for learner riders, however, would be raised from 80 km/h to 90 km/h.

Progression to the P1 phase would still require a six-month period with a learner licence, a Check Ride and a Pre-Provisional test. It would now also require the successful completion of a motorcycle-specific Hazard Perception Test.

There are a few recommended changes for the P1 phase. The minimum age for obtaining a P1 licence would now be 18 years and 6 months. The restriction to a Learner Approved Motorcycle Scheme

motorcycle would now apply regardless of previous licences held, would now be banned from any phone use while riding, and a night curfew would apply to riders aged under 25 who do not hold a P2 or full driver licence. The maximum speed restriction for P1 riders, however, would be raised from 80 km/h to 100 km/h.

Progression to the P2 phase would still require a 12-month period with a P1 licence. The minimum age for obtaining a P1 licence would now be 19 years and 6 months. In addition to the older minimum age, the P2 phase would now require the novice motorcyclist to ride a Learner Approved Motorcycle Scheme motorcycle and riders would now be banned from any phone use while riding.

The minimum age for a full licence is currently 20 years. The recommended GLS would increase that to 21 years and 6 months.

Acknowledgements

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Appendix

This section lists the current requirements and conditions for GLS in the various jurisdictions in Australia. Separate tables are provided for the learner phase and provisional phase (with notes within cells where necessary for P1 and P2 conditions).

Learner Phase								
Element	**Tas**	**ACT**	**NSW**	**NT**	**Qld**	**SA**	**Vic**	**WA**
Eligibility requirements								
Minimum age	16 yrs 6 mths	16 yrs 9 mths	16 yrs 9 mths	16 yrs	17 yrs or 16 yrs 6 mths if CEO satisfied there is a special need	18 yrs (17 yrs if hold provisional car licence, 16 if in regional SA and travelling for special purposes)	18 yrs	16 yrs
Requirement to hold car driver licence	No	No	No	No	Yes (must have had provisional or open car licence for at least 1 year prior to applying)	No	No	No
Requirement to complete education or training	Yes – 2 day Pre-Learner Course	Yes – approved pre-learner course	Yes – approved pre-learner course	Yes – Pre-Learner Rider Training Course	Yes – Q-Ride pre-learner course	Yes – rider training prescribed by regulations	Yes – 2 day pre-learner course	No
Requirement to complete knowledge test	Yes – Driver Knowledge Test	Yes – Road Rules knowledge test	Yes – Rider Knowledge Test	Yes – Rider Knowledge Test	Yes	Yes	Yes	Yes – Motorcycle Theory Test
Requirement to pass practical test	Yes – on-range and on-road	Yes – Rider Training Course	Yes	Yes	No, competency demonstrated in Q-Ride training	Yes – on-range	Yes	No
Hazard Perception Test	No	No	No	No	No	Yes - generic	Yes - generic	Yes, after 6 months on Ls
Minimum tenure	6 months	3 months	3 months	6 months	3 months	12 months	3 months	No minimum but must be 17 to sit practical assessment
Maximum tenure	12 months	12 months	12 months	24 months	None	24 months	15 months	36 months
Restrictions and conditions								
Display L plates	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Blood alcohol concentration limit	Zero	Zero	Zero	Zero	Zero	Zero	Zero	Zero
Learner Approved Motorcycle restriction	Yes	Limited to motorcycles with a power to weight ratio of 150 kW/t	Yes	Yes	Yes	Yes	Yes	Yes

Element	Tas	ACT	NSW	NT	Qld	SA	Vic	WA
Automatic transmission restriction	Yes, unless Pre-Learner course done on a manual motorcycle	No	Yes	No	No	Yes, if tested on an automatic motorcycle	Yes, if tested on an automatic motorcycle	Yes
Additional speed restrictions	80 km/h	No	90 km/h	80 km/h	No	100 km/h	No	100 km/h
Passenger restrictions	Yes, unless carrying passenger for purpose of giving instruction	Yes, sidecar passengers for supervision only	Yes	Yes	Yes, sidecar passengers for supervision only	Yes	Yes, sidecar permitted	No
Mobile phone use restrictions	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Some restrictions
Towing restriction	No	Yes	Yes	No	Yes	Yes	Yes, with exceptions	No
Night-time riding restriction	No	No	No	No	No	Yes, 12-5am if <25, exception for some riding purposes	No	No
Lane filtering restriction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
High visibility clothing required	No	No	No	No	No	No	Yes	No
Minimum riding experience (hrs)	No	No	No	No	No	No	No	Yes (50 hrs supervision, including 5 at night, if aged <25 yrs)
Reduced demerit point threshold	4 pts in 12 mth period	4 pts within 3 yrs	4 pts total	5 pts within 12 mths	4 pts in 12 mths	4 pts total	5 pts in 12 mths if not full driver licence	4 pts unless holding another licence 2 yrs post-learner
Supervision requirement	No	No	No	No	Yes, for first yr	No, but permitted	No	Yes
Provisional Phase								
Eligibility requirements								
Minimum age	P1: 17 P2: 18	17	17	16 yrs 6 mths	P1: 17 yrs 3 mths	19	18 yrs 3 mths	P1: 17 P2: 17 yrs 6 mths
Requirement to complete training	Check Ride a minimum of 28 days before pre-provisional test	Pre-provisional course	Yes	Pre-provisional training course	Q-Ride course or Q-Safe test	Rider Safe Advanced training	Check Ride a minimum of 1 mth before pre-provisional test	No
Requirement to pass practical test	Yes	Yes	Yes	Yes	Q-Ride course or Q-Safe test	Yes	Yes	Yes
Hazard Perception Test	No	No	No	No	Yes – motorcycle specific	Yes – unless hold a driver licence	Yes – unless hold a driver licence	No – HPT during learner phase

Element	Tas	ACT	NSW	NT	Qld	SA	Vic	WA
Minimum tenure	P1: 12 mths P2: 2 yrs if <23; 12 mths or until age 25 if aged 23-25; 12 mths if >25	36 mths	P1: 12 mths P2: 2 yrs if <26; none if >25 with full driver licence and P1 for >12 mths	2 yrs if >25 or 1 yr if 25 or hold full driver licence	24 mths	24 mths	4 yrs if no driver licence and <21; 3 yrs if 21 and no driver licence, until end of P stage if hold P licence, no minimum if full drver licence	P1: 6 mths P2: 18 mths, or 6 mths if held full driver licence for 2 yrs.
Restrictions and conditions								
Display P plates	P1: red P2: green	Yes, but for 12 mths only if >26	P1: red P2: green	Yes if no full driver licence	P1: red P2: green	Yes if no driver licence	Yes	P1: red P2: green
Blood alcohol concentration limit	Zero	Zero	Zero	Zero	Zero	Zero	Zero	Zero, unless other GLS 2 yrs post-learner
Learner approved motorcycle restriction	P1: Yes unless previously held P2 licence P2: No	Yes, first 12 mths	Yes	Yes	Yes	Yes	Yes	Yes
Automatic transmission restriction	P1: Yes, if tested on an automatic P2: Yes if tested on an automatic	Yes, for first 12 mths if tested on an automatic	P1: Yes P2: No	No	No	Yes, if tested on an automatic	Yes, for first 3 yrs. Licence for automatic only if tested on one	Yes, if tested on an automatic
Additional speed restrictions	P1: 80 km/h P2: none	No	P1: 90 km/h P2: 100 km/h	100 km/h unless holding full driver licence	No	100 km/h unless holding full driver licence	No	No
Passenger restrictions	P1: Yes P2: No	Yes, first 12 mths	P1: Yes P2: No	Yes, first 12 mths	Yes, first 12 mths	No	Yes	No
Mobile phone restrictions	Yes, hands-free exception	Yes	Yes	Yes	Yes, hands-free exception	Yes	Yes	No
Towing restrictions	No	Yes, first 12 mths	P1: Yes P2: No	No	No	No	Yes	No
Night-time riding restrictions	No	No	No	No	No	12-5am if <25 and does not hold a P2 or full driver licence	No	P1: 12-5am for first 6 mths unless hold other. GLS licence 2 years post-learner. P2: No
Lane filtering restrictions	Yes	Yes	Yes	Yes	Yes	Yes, first 12 mths	No	No
Reduced demerit point threshold	4pts in 12 mths	4 pts	L: 4 pts P1: 4 pts P2: 7 pts	5 pts in 12 mths unless holding a full driver licence	4 pts unless holding a full driver licence	4 pts unless holding a full driver licence	5 pts in 12 mths	4 pts in first 12 mhts, 8 pts second 12 mths unless other licence held 2 years post learner

Element	Tas	ACT	NSW	NT	Qld	SA	Vic	WA
Minimum age for full licence	20	20	20	18 yrs 6 mths	20 yrs 3 mths	21	21 yrs 3 mths	19