

Transport for NSW | Centre for Road Safety

Evaluation of the NSW Motorcycle Graduated Licensing Scheme

Summary Report
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1 Key findings

- Overall, the evaluation showed that the NSW Motorcycle Graduated Licensing Scheme (MGLS) is closely aligned with current best practice, with the only exceptions relating to components of on-road assessment for learner licensure and night-time riding restrictions.
- The NSW driver GLS and MGLS have more similarities than differences, with most differences found for the learner licence stage. Moreover, most differences align with the best practice identified for a MGLS.
- From an outcome evaluation, comparing relevant crash and trauma trends before and after the changes implemented to the NSW MGLS in 2009, a number of positive findings were observed for P2 riders that suggest the MGLS has improved rider safety in NSW. However, positive outcomes were not observed in all statistical comparisons that were undertaken.
- The positive findings from analysis of crash and casualty trends for fully licensed riders suggests flow-on effects of more experience at this licensing stage following an extended P2 period and/or removing two years of less inexperienced riders from this cohort.
- A process evaluation of the NSW Motorcycle Rider Training Scheme (MRTS) showed that recent processes for engaging rider training providers improved in 2017 and 2018 in terms of quality and consistency. The relationship between Transport for NSW (TfNSW) policy and program development staff, TfNSW delivery staff and providers was also viewed positively, resulting from recent attention to building relationships between these sectors.
- The MRTS was viewed positively overall; however, the evaluation found it is not being delivered entirely as intended. The findings suggest that deviations were a result of some providers/instructors not fully understanding the course structure/content or underlying objectives, and/or trying to make the course more accessible to students.

2 NSW Motorcycle Graduated Licensing Scheme and novice rider training

Novice rider safety education initiatives and licensing restrictions resembling a graduated licensing scheme have long been in place in NSW. Compulsory training has been in place since 1990 and a learner and provisional 1 phase have been in place since 2000. In 2007, the NSW Government introduced 'zero tolerance' (4 demerit points and 3-month licence suspension) for any rider speeding offence on the learner or provisional licence, and in 2009 formally implemented the NSW Motorcycle Graduated Licensing Scheme (MGLS). An overview of the current MGLS in NSW is at Figure 1.

The MGLS prepares new riders to be safe and low risk riders through experience (training and on-road), tests, restrictions and conditions. GLS are designed to reduce the risk and severity of crash involvement among young motorists by providing a staged approach to driver licensing. In GLS models, restrictions are in place in early licence stages to enable novice drivers/riders to obtain skills in low-risk driving environments, with restrictions eased as they move through the learning and provisional phases. Most Australian jurisdictions now have some form of motorcycle GLS, though their design varies.

The introduction of the MGLS in NSW was also intended to align the process of obtaining a rider licence with that of obtaining a car (driver) licence, given a GLS for novice drivers has been in place in NSW since 2000. Before this, riders could obtain an unrestricted licence at age 18 years, compared to 20 years for drivers.

Key to the implementation of the MGLS in 2009 was the introduction of a two-year second provisional (P2) period for riders aged under 25 years. Before 2009, motorcycle riders could gain a full licence at the end of a one-year provisional 1 phase. The P2 period extended the P1 restrictions of zero alcohol and phone use and introduces a more graduated speed restriction of 100 km/h (progressing from P1 90 km/h before the 110 km/h state limit when fully licensed).

The Motorcycle Rider Training Scheme (MRTS) was introduced in 1990 and forms part of the current MGLS requirements. The MRTS was developed to help riders gain the key skills required for riding on the road and comprises a pre-learner course and pre-provisional course. It is mandatory in "declared areas", with some areas deemed "undeclared" where demand for licences was low and distances to closest MRTS facilities great. The current version of training has been in place since 2004.

All pre-learners must successfully complete the rider knowledge test. In declared areas, learners must successfully complete the MRTS end test - the Motorcycle Operator Skills Test (MOST), in order to attain a provisional licence. In undeclared areas, learners must successfully demonstrate their skills in the roadside Motorcycle Rider Driving Ability Road Test (R-DART) to attain a provisional licence.

Licence stage	Prerequisites <i>In addition to minimum licence tenure</i>	
	Declared areas	Undeclared areas
Learner rider licence Minimum three months 	Successfully complete the pre-learner course Pass the rider knowledge test	Pass the rider knowledge test
Provisional rider licence, stage 1 (P1-red) Minimum 12 months 	Attend the pre-provisional course and pass the Motorcycle Operator Skills Test (MOST) (after course)	Pass the Motorcycle Rider Driver Road Test (R-DART)
Provisional rider licence, stage 2 (P2-green) Minimum 24 months (under 25 yrs) 	None	None
Full rider licence	None	None

Figure 1: NSW MGLS licence stages and prerequisites for progression

3 About the evaluation

In 2017, the Centre for Road Safety (CRS) commissioned Transport and Road Safety (TARS) Research, UNSW Sydney to complete a process and outcome evaluation of the integrated system of motorcycle rider training, assessment and licensing in NSW, as well as to identify best practice in novice rider licensing and training. This evaluation of the NSW MGLS focused on assessing the potential impact of the Motorcycle Rider Training Scheme (MRTS) and MGLS on motorcycle rider safety in NSW.

The evaluation consisted of three streams:

- Stream 1: Motorcycle GLS best practice
- Stream 2: Outcome evaluation of the NSW MGLS
- Stream 3: Process evaluation of the NSW MRTS

3.1. Evaluation questions

The following evaluation questions were agreed for each evaluation stream:

Stream 1: Motorcycle GLS best practice

- 1) Based on available Australian and international evidence, what potential elements of motorcycle GLS confer the greatest safety benefits for riders?
- 2) What GLS models are in place in other Australian jurisdictions, and what has been the experience of other jurisdictions with these (particularly, the recent changes in VIC and QLD)?
- 3) What rider training and testing/assessment programs are in place in other Australian jurisdictions, and what has been the experience of other jurisdictions with these?
- 4) Based on available Australian and international evidence, what are the key competencies that riders should be achieving at each GLS phase?
- 5) Based on available Australian and international evidence, what is best practice in terms of training content and delivery, and assessment activities, at each GLS phase?
- 6) How well does the NSW MGLS align with best practice (based on the available evidence and safe rider competencies as determined in Stream 1)?
 - a) What enhancements could be made to licensing conditions, to improve rider safety?
 - b) What enhancements could be made to training content and delivery model, to improve rider safety?
 - c) What enhancements could be made to assessment activities, to improve rider safety? Any proposed enhancements should consider any potential impact on regional/rural applicants as well as special need/disadvantaged applicants.

- 7) How aligned is the current NSW MGLS with the NSW driver GLS? Would further alignment deliver safety and customer experience benefits, and how could this be achieved?

Stream 2: Outcome evaluation of the NSW MGLS

- 1) To what extent have the NSW MGLS elements introduced in 2009 improved rider safety?
- 2) To what extent does the MRTS improve rider safety? Is there any difference in safety outcomes for riders who obtain their licence in undeclared areas, and those who have undertaken rider training in declared areas?

Stream 3: Process evaluation of the NSW MRTS

- 1) Is the current novice motorcycle rider training program currently being delivered as intended, and how could it be improved?
- 2) Are the governance and quality control processes in place effective for supporting the delivery of training and testing, and how could they be improved?
- 3) What motivators and barriers exist to progression through the GLS? For example, licensing conditions, cost considerations, etc.
- 4) What practical options exist for making rider training more accessible, including extending it to undeclared areas?

3.2. Evaluation methods

The evaluation methodology included the following data collection methods:

Stream 1 Motorcycle GLS best practice

- Review of recent literature (past 10 years), desktop review of Australian jurisdiction websites, and interviews with road authority representatives in all Australian jurisdictions.

Stream 2 Outcome evaluation of the NSW MGLS

- Interrupted time series analyses (n=151) were conducted using linked NSW crash, hospital, licence and registration data for 1 January 2005 to 31 December 2016 focusing on trends pre and post the changes implemented to the NSW MGLS in 2009. The main pre-post analysis of interest concerned crashes of riders in the new P2 period post compared to riders in the first two years of full licensure pre (although P2 crash numbers were too small to examine for some sub-analyses). Crashes were examined by severity and for involvement of alcohol, speed and those occurring at night. Trends in learner and full licence rider crashes in pre and post periods were also analysed for comparison.

Stream 3 Process evaluation of the NSW MRTS

- Qualitative research that included stakeholder interviews with NSW road authority and licensing representatives, motorcycle groups, MRTS providers, instructors, assessors and licence applicants; focus groups with licence applicants.

4 Overview of findings from the motorcycle GLS best-practice review

4.1. Motorcycle GLS best practice

While recent literature regarding MGLSs was found to be limited, the overall research provides support for introducing a motorcycle GLS (when none was previously in place) and for strengthening the existing MGLS.

Table 1 summarises best practice GLS elements based on available research, and whether these elements are currently included in the NSW MGLS. The NSW MGLS is closely aligned with current best practice (see Table 1). The only exceptions are lack of on-road assessment for learner licensure and night-time riding restrictions.

Table 1: Best practice motorcycle GLS elements and NSW MGLS alignment

Best practice motorcycle GLS elements	NSW MGLS alignment	
	Ls	Ps
Learner stage		
Older versus younger minimum age, not younger than minimum provisional driver age	✓	N/A
Mandatory pre-licence education and training	✓	N/A
Combined knowledge and practical entry assessments, including on-road assessment	✓ x	N/A
Learner and Provisional stage		
Zero alcohol restriction.	✓	✓
Restricting high power-to-weight vehicles.	✓	✓
Restricting carriage of pillion passengers.	✓	✓
Restricting all mobile phone use.	✓	✓
Restricting riding at night.	x	x

The best practice findings are primarily based on evidence of associations between the risk behaviour and crash risk, rather than evaluated outcomes of MGLS restrictions on the behaviour. This is because the literature review identified very little published research specific to MGLS models or their specific components.

In addition to the identified best practice components, the evaluation found indirect research suggesting potential benefits, but with no clear indicative evaluations, for:

- Longer (95+ days) rather than shorter (<95 days) minimum learner periods.
- Automatic transmission vehicle restrictions to address potential elevated risk in riding manual vehicles where a learner has not been tested in a manual.
- Conspicuity (high visibility vest, headlight on) requirements.
- Reduced demerit point threshold (tougher penalties).

The above components are included within the NSW MGLS model with the exception of conspicuity requirements.

4.2. Improving novice rider training competencies to closer align with best practice

Table 2 summarises the best practice competencies and overarching performance criteria, and whether each is included in the current NSW MRTS Pre-L and Pre-P courses.

Table 2. Goals for Rider Education (Senserrick et al, 2016) best practice competencies and NSW MRTS alignment

Best practice competencies		NSW MRTS Alignment	
Competencies	Performance Criteria	Pre-L	Pre-P
1 Define and apply safe motorcycle riding behaviours	1.1 Requirements for safe riding are acknowledged, interpreted and applied	✓	✓
	1.2 Importance of attitude in abiding by the road rules in relation to level of risk faced by a rider is understood and considered in motorcycle riding activities	×	×
	1.3 Importance of cooperation with other road users in order to ride safely is understood and considered in motorcycle riding activities	✓	✓
	1.4 Motivation to ride safely is interpreted and described, including values, emotions and personal needs	✓	✓
	1.5 Principles of proactive riding, also known as low-risk riding, that keep the rider at a low-level risk are interpreted and applied	✓	✓
	1.6 Specific factors that constitute an actual risk of a collision are understood and applied, including options for avoiding a collision; crash avoidance space; variables affecting minimum space; effects of observation, perception and response time; and consequences related to crash avoidance spaces	✓	✓
2 Interpret and apply low-risk riding strategies	2.1 Risk factors contributing to the formation of opinions and beliefs about low-risk riding are understood and applied	✓	✓
	2.2 Road safety information that reflects the changing road environment is clarified and considered in motorcycle riding activities	✓	✓
	2.3 Human psychological and physiological aspects that can influence low-risk riding are acknowledged and considered in motorcycle riding activities	×	✓
	2.4 Low-risk riding strategies are understood, interpreted and applied consistently	✓	✓
	2.5 Features and benefits of protective clothing are understood and applied	✓	×
3 Interpret and apply road rules applicable to safe motorcycle riding	3.1 Relevant rules and regulations are identified, interpreted correctly and consistently applied	×	✓
	3.2 Road signs, signals and markings are identified and considered in motorcycle riding activities	×	✓
	3.3 Purpose of road rules and traffic safety laws in ensuring safe and efficient regulation of traffic flow is understood and considered in motorcycle riding activities	✓	✓
4 Manage collision when riding a motorcycle	4.1 Common contributing collision factors, including age, experience, speed, drugs, alcohol, road conditions, fatigue and time of day are recognised, and appropriate actions are managed	×	×
	4.2 External factors that could lead to collisions, including speed, space, vision, road conditions, motorcycle condition and environmental conditions are understood and managed	✓	✓
	4.3 Internal factors that could lead to collisions, including emotional factors, rider's own behaviours and rider's operation at high levels of risk are acknowledged and managed	×	✓
	4.4 Consequences of collisions in relation to relevant traffic laws and physical, financial and psychological costs to the individual and society are understood and managed	×	✓
	4.5 Functions of motorcycle controls are understood and demonstrated	✓	✓
	4.6 Corrective actions to be taken after a collision are understood and applied if required	×	×
5 Demonstrate and maintain a high level of competence in motorcycle control skills	5.1 Appropriate action is taken to respond to various types of adverse conditions	×	×
	5.2 Principles of braking are applied at a high level of competence	✓	✓
	5.3 Principles of steering and counter-steering are applied at a high level of competence	✓	✓
	5.4 Slow speed manoeuvres are carried out at a high level of competence	✓	✓
	5.5 Motorcycle is guided and controlled at a high level of competence	✓	✓
	5.6 Principles of body weight transfer are applied at a high level of competence	✓	✓

The NSW MGLS and MRTS were found to generally align well with the identified best practice motorcyclist training competencies, with the below exceptions:

- Limited attention to higher level skills relating to on-road riding choices.
- Lack of on-road training or assessment at the learner level.

The evaluation found a motorcycle specific hazard perception test (HPT) and on-road assessment for pre-provisional licensure could strengthen alignment.

4.3. Alignment between NSW driver GLS and motorcycle GLS

The evaluation found the NSW driver GLS and MGLS to have more similarities than differences, with most differences found for the learner licence stage. Moreover, most differences align with the best practice identified for a MGLS.

The main exception that could be considered for inclusion in the NSW MGLS is the inclusion of a HPT to progress from a learner to a provisional licence.

5 Overview of findings from the outcome evaluation of the NSW MGLS

5.1. Effectiveness of NSW motorcycle GLS elements introduced in 2009

Given the main change of the 2009 NSW MGLS was the introduction of a P2 period, a number of positive findings observed for P2 riders suggest the MGLS improved rider safety; albeit these positive outcomes were not observed in all of the statistical comparisons that were undertaken.

The positive outcome findings from the evaluation include:

- Declines in quarterly crash trends of post-MGLS P2 riders, compared to pre-MGLS riders in the first two years on a full licence, for all casualty crashes (4% decline per quarter), serious injury crashes (3%) and other injury crashes (5%).
- Declines in all casualty crashes for full licence riders.
- Annual decreases among novice riders and specifically learner riders in all night-time (11 pm to 5 am) casualty crashes and other injury crashes, and stabilising of an increasing trend in novice rider serious injury crashes.

The positive findings in terms of decreasing casualty crashes and hospitalisations among full licence riders, suggests flow-on effects of more experience at this licensing stage following an extended P2 period and/or removing two years of less inexperienced riders from this cohort.

However, some negative patterns were found for the post-MGLS learners, including:

- Slower declines or a stabilising trend after a decline in all casualty crashes, serious injury crashes and alcohol-related casualty crashes.
- An increasing trend following a stable trend in all speed-related casualty and serious injury crashes.

5.2. Extent to which the MRTS improves rider safety

Limitations of the data made it difficult for trend analyses to be performed and conclusions to be drawn regarding the impact of the MRTS in undeclared areas. Moreover, comparison of declared and undeclared areas is difficult to interpret, given that they differ in aspects besides the presence of the MRTS.

The literature review found that positive outcomes have been identified when MGLS education-training is mandatory and best practice identified from the European Union would deem this include on-road practical exercises and assessment.

6 Overview of findings from the process evaluation of the NSW MRTS

6.1. Motorcycle rider training delivery

The MRTS was generally viewed positively overall, however many considered it timely to review in the context of the 2009 MGLS developments and new NSW motorcycle crash patterns, road rules, safety technology and campaigns. Consistent with findings from best practice, the most frequently and consistently raised improvement among all interviewee groups was increased attention to on-road riding, particularly a strong need to bridge the gap between on-range riding and unsupervised on-road riding during the learner phase.

The evaluation suggests the MRTS is not being delivered entirely as intended. The findings suggest deviations were a result of provider/instructors not completely understanding the course structure/content or underlying objectives and/or trying to make the course more accessible to students. Suggested improvements included simplifying and modernising the course resources (in terms of language and materials) and refining governance and quality assurance.

6.2. Governance and quality control processes

The evaluation found recent processes implemented by TfNSW delivery staff for engaging rider training providers improved in 2017 and 2018 in terms of quality and consistency.

The relationship between TfNSW policy and program development staff, TfNSW delivery staff and providers was also viewed positively, and was considered to be a result of recent efforts to strengthen the relationships between these three sectors.

A number of areas were identified for improvement that included:

- Enhancing the training requirement of instructors by requiring a Certificate IV (TAFE) qualification, as required in other states.
- More opportunities for less experienced instructors to observe experienced instructors deliver the MRTS and to receive feedback on their own performance.
- Training materials could be structured and phrased more clearly.
- Greater clarity for providers of required procedures for managing and reporting incidents.

6.3. Motivators and barriers to progressing through the MGLS

Motivators identified for motorcycle licensure included:

- Convenient and or financially-viable cost-effective transport option.
- Recreation and image.
- Ease to obtain a motorcycle licence (relative to a car licence), with some participants viewing it as too easy.

6.4. Making rider training more accessible

The approach to improving accessibility of the MRTS raised by most stakeholders and licence applicants was to extend it to undeclared areas – potentially using online methods for theoretical activities and assessments, and a “travelling roadshow” for practical components.

Simplification of language in information and curriculum materials was suggested to improve access for applicants with lower English ability, as well as translation and interpretation services.

The evaluation identified various reasons for novice riders’ lack of progression from the Pre-Learner to Pre-Provisional Course that included:

- Undertaking the Pre-Learner Course with no intention of progressing.
- Identifying from the Pre-Learner Course that motorcycling is not for them.
- Not being able or motivated to purchase/hire the equipment required for practice and to take part in the Pre-Provisional Course.
- Not feeling adequately prepared for on-road riding by the Pre-Learner Course.
- Not gaining enough experience to feel prepared to enrol in the Pre-Provisional Course within the 12-month validity of the learner licence.

7 Limitations

Like all evaluations, this evaluation includes some limitations that must be acknowledged.

Firstly, it should be noted that recent changes since the beginning of this evaluation may not be reflected in findings of the literature review, desktop review, or stakeholder consultation.

Findings of Stream 1 consultation, and Stream 3 findings, are based on a limited number of observations, interviews and focus groups – possibly involving selection biases. Further, necessarily, interviews and focus groups relied on self-reports, which may involve some error, and MRTS course observations involved a degree of subjectivity. Consideration of the consistency between information from different sources served to build confidence in our findings.

Interrupted time series analysis is the strongest quasi-experimental research design to achieve the objectives of Stream 2 but cannot account for unmeasured separate factors (such as impacts from the global economic downturn just prior to the MGLS changes) that might influence exposure and crash outcomes. In addition, licence number and status (L, P1, P2 or full licence) data were missing for just over 1 in 5 motorcycle riders involved in crashes who were therefore excluded from analyses. These considerations might limit the generalisability of Stream 2 findings.

Declared or undeclared status was also unknown for a proportion of riders. For some of the various analyses, case records were too low to analyse monthly trends and instead quarterly and yearly trends were analysed. Even then, some comparisons still involved numbers too low to analyse. It should also be recognised that there are likely differences between declared and undeclared rider cohorts, irrespective of the MRTS (e.g. off-road riding experience, reasons for riding, distances travelled per trip) and differences in the typical areas they ride, which also contribute to the findings, but which cannot be accounted for in analyses of routinely collected records.

8 References

Senserrick TM, McRae D, Wallace P, de Rome L, Rees P, Williamson A (2016). *Development of Education and Assessment Components of Victoria's New Motorcyclist Graduated Licensing System: Summary report*. Report to VicRoads. The University of New South Wales: Sydney.

Transport for NSW, Centre for Road Safety

T 02 8265 7149

E roadsafety@transport.nsw.gov.au

W roadsafety.transport.nsw.gov.au

Level 4, 18 Lee Street
Chippendale NSW 2008
PO Box K659 Haymarket 1240

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