Motorcycle Safety Research Project

Interim Report 2:
REVIEW OF THE CONSISTENT ASSESSMENT PROCESS (CAP)

Report to Queensland Department of Transport and Main Roads

Prepared by Narelle Haworth, Peter Rowden, Lisa Buckley & Kristi Greig

MARCH 2012

Deliverable Task 2.5

Preface

Project Manager / Team Leader:

Professor Narelle Haworth

Research Team:

Mr Peter Rowden

Professor Barry Watson

Mr Darren Wishart

Dr Lisa Buckley

Kristi Greig

Executive Summary

Motorcycle trauma is a serious road safety issue in Queensland and throughout Australia. In 2009, Queensland Transport (later Transport and Main Roads or TMR) appointed CARRS-Q to provide a three-year program of Road Safety Research Services for Motorcycle Rider Safety. Funding for this research originated from the Motor Accident Insurance Commission. This program of research was undertaken to produce knowledge to assist TMR to improve motorcycle safety by further strengthening the licensing and training system to make learner riders safer by developing a pre-learner package (Deliverable 1), and by evaluating the Q-Ride CAP program to ensure that it is maximally effective and contributes to the best possible training for new riders (Deliverable 2), which is the focus of this report. Deliverable 3 of the program identified potential new licensing components that will reduce the incidence of risky riding and improve higher-order cognitive skills in new riders. This report provides a summary of Deliverables 2.1 through to 2.4.

Deliverable 2 sought to examine how to best assess the competencies of motorcycle riders within a licensing context and to review how this was currently being undertaken in Queensland in comparison with approaches taken elsewhere. The tasks undertaken for Deliverable 2 were a review of previous recommendations for reform of Q-Ride, a review of the literature and consultations with motorcycle licensing and training experts regarding best practice in competency-based training and assessment and, finally, development of an evaluation framework for the Continuous Assessment Process (CAP).

Deliverable 2.1 reviewed the status of implementation of Reforms 3, 4, 5, and 6 recommended by Christie, Harrison and Johnston (2006) in their report for Queensland Transport entitled *Q-RIDE Curriculum Reform.* The review concluded that some of the recommendations for reform have been addressed, however others were not addressed in the manner specified by Christie et al. (2006). Whilst the adoption of such reforms to date is not strictly in accordance with the recommendation by Christie et al. it appears that the department has progressively engaged in endeavours to meet the reforms. The potential problem with this approach is that incorrect training and assessment or non-compliance may happen in the interim.

The literature review (**Deliverable 2.2a**) found that competency-based training and assessment of motorcycle riders is uncommon in other jurisdictions and so few evaluations of its effectiveness are available. The content of the Q-Ride competencies was supported by the literature and expert opinion (found in **Deliverable 2.2b**), although the potential to expand the competencies to better measure higher order skills such as hazard perception and attitudes to risk taking was identified.

Deliverable 2.2b found that experts held varied views on what constitutes an ideal framework for rider training and assessment. In essence, best practice for each expert may merely reflect their personal involvement with these issues rather than evidence-based

practice. On this basis it appears that competency standards for assessment may not be able to be aligned with what should ideally be learnt in regard to rider behaviour. Support for the inclusion of basic riding skills and roadcraft was found. **Deliverable 2.2c** combined the results of Deliverables 2.2a and 2.2b.

Deliverable 2.3 consisted of an internal workshop held by the CARRS-Q research team to discuss the implications of the research findings to date for possible further refinement of the CAP. The following conclusions were reached:

- There is no evidence to support removal of any of the current competencies in Q-Ride;

- Further research is needed on how to effectively assess cognitive and attitudinal skills for inclusion in the competencies;

- There appears to be some conceptual conflict between the standardisation imposed by the CAP and the flexibility in curricula that has contributed to confusion in the industry;

- Ongoing monitoring of injury crash records of graduates may be useful to identify Registered Service Providers which are performing significantly worse than others and also to examine if the nature of crashes suggests that additional competencies need to be addressed; and

- In the context of any future potential changes to the licensing system, the CAP may need to be revisited to reassign competencies across licensing stages (e.g. some may be pre-learner and some pre-licence) and incorporate revision of competencies from earlier stages.

Deliverable 2.4, *Development of a framework for ongoing review and improvement of the Consistent Assessment Process (CAP)* concluded that if the usual evaluation framework was applied to the CAP, a process evaluation would examine whether the CAP provides a consistent process for assessment of Q-Ride applicants, an impact evaluation would examine whether the CAP ensures that Q-Ride applicants reach a demonstrated level of skill and proficiency as a rider, and an outcome evaluation would judge whether Q-Ride as a whole is reducing the crash and injury risk of new riders.

Currently, the main process for providing information for ongoing monitoring and review of the CAP is the range of audits specified in the Q-Ride Audit Guidelines (2008a), particularly the training and assessment audits. To maximise the usefulness of the information gathered in these audits, the following recommendations are made:

1. Development of a clear coding framework to simplify analysis of audit results;

2. Clear labelling and definition of fields in the audit database;

3. Quality control on data entry;

4. Regular monitoring of extent of compliance with the CAP;

5. Development of a documented audit strategy including Registered Service Provider (RSP) and Accredited Rider Trainer (ART) sampling designs; and

6. Production of an annual summary of audit results that summarises audit frequencies and compares these with those specified in the guidelines, identifies any issues that have arisen in terms of the CAP and suggests strategies to address these.

The potential exists to link some of the data collected as part of the CAP with crash information for use in an outcome evaluation. The lack of a systematic and ongoing measure of the skill and proficiency of riders limits the potential for impact evaluation. However, if some opportunity arose to collect this information, then linking it to CAP information might provide useful insights into how well particular competencies are contributing to rider skill and proficiency.

Conclusions

Q-Ride is a competency based training and assessment approach to motorcycle licensing. This approach is uncommon across Australia and internationally and consequently there is little published evidence comparing the safety outcomes of this approach with more traditional training and testing regimes. The research does suggest, however, that the competencies that are trained and assessed in Q-Ride are those which are necessary for safe riding. Training and assessment of higher-order skills related to hazard perception and risk management are also needed but are not satisfactorily covered in either Q-Ride or the traditional training and testing regimes across the world. These represent the major challenge in improving motorcycle licensing systems worldwide.

The delivery of Q-Ride by private providers has been associated with pressure to introduce systems to ensure validity and equity, and led to the introduction of the Consistent Assessment Process (CAP) and other changes to Q-Ride. It is difficult to assess the success of the CAP from currently collected audit data and adequate resourcing is needed to allow improvements in monitoring processes. Linking some of the information collected as part of the CAP with crash data would allow an evaluation of Q-Ride in terms of its effects on motorcycle rider crash and injury risks.

Table of Contents

INTERIM REPORT DELIVERABLE 2: REVIEW OF THE CONSISTENT ASSESSMENT PROCESS (CAP)

1.   INTRODUCTION

The Q-Ride Competency-Based Training and Assessment (CBTA) licensing scheme for motorcyclists was initially introduced by Queensland Transport in 2001 on a trial basis for a duration of three years and has continued to the present time. Within the Q-Ride scheme, training and assessment are outsourced to accredited Registered Service Providers (RSPs) throughout the state. Prior to Q-Ride, Queensland had relied solely on licence testing for motorcyclists by Queensland Transport (a licensing stream now known as Q-SAFE). Whilst Q-SAFE continues to operate, the vast majority of motorcycle licenses issued in Queensland currently occur within the Q-Ride system (Queensland Parliamentary Travelsafe Committee, 2007).

Competency-Based Assessment (CBA) operates on the premise that individuals are judged competent or not yet competent by displaying observable behaviours that represent pre-defined assessment standards (competencies). CBTA incorporates training which is conducted with the aim of providing trainees with the requisite knowledge and skills required to reach competency. If an individual is assessed and deemed 'not yet competent' then further training is usually provided and an opportunity to be assessed again is granted until the trainee is deemed competent. Recognition of Prior Learning (RPL) is common in CBTA programs where evidence of such learning can be established. However, whilst Q-Ride is a CBTA licensing scheme, it does not give credit for prior learning.

CBTA is broadly used within domains such as workplace health and safety, and vocational training and education. However, most driver and rider licensing systems do not follow the CBTA model but incorporate training (voluntary or mandatory) followed by a formal licence test. The CBTA model is an option for motorcycle licensing in Queensland and South Australia (where it is also an option for car licensing). It is also used for truck licensing in states such as Queensland and New South Wales.

The Q-Ride competency standards (Queensland Transport, 2007) specify four major competencies:

1.   Prepare motorcycle for operation;
2.   Manoeuvre motorcycle at low speed;
3.   Control motorcycle at road speeds; and
4.   Apply roadcraft.

Each competency is further 'unpacked' to specify *elements* that collectively underpin each of the four competencies. These elements are specified in Table 1. In the *Q-Ride Competency Standards* document, Queensland Transport (2007) have also specified the *performance*

criteria for each element, what forms of evidence are acceptable for assessment, and the assessment environment in which the specific behaviours are to be performed and assessed. The methods of assessment and expected level of performance of the standards are also specified in greater detail in the document *Q-Ride Consistent Assessment Process* (Queensland Transport, 2008b) to guide rider trainers during assessment.

Table 1. Q-Ride assessment competencies and underlying elements. Source: Queensland Transport (2007).

Units of Competency	Elements of Competency
1. **Prepare motorbike for operation**	1.1 Perform pre-ride safety check 1.2 Initiate regular maintenance and routine service 1.3 Mount/dismount motorbike
2. **Manoeuvre motorbike at low speed**	2.1 Posture 2.2 Starting/stopping motorbike 2.3 Move off and stop 2.4 Changing gears 2.5 Perform low speed manoeuvres
3. **Control motorbike at road speeds**	3.1 Carry out counter-steering manoeuvre 3.2 Execute braking procedures
4. **Apply Roadcraft**	4.1 Defensive riding principles 4.2 Apply roadcraft 4.3 Manage riding situations

A report by Christie, Harrison and Johnston (2006) highlighted the need for Q-Ride to adopt a more stringent approach to assessment so that all RSPs were conducting assessments in the same manner. The Consistent Assessment Process (CAP) was developed to provide a detailed framework for assessment within the Q-Ride system. The CAP was adopted in 2008 to not only establish clear assessment requirements across various service providers, but also as a vehicle for reporting and monitoring by the then Queensland Transport (now Transport and Main Roads, TMR) to ensure the maintenance of the Q-Ride competency standards.

Deliverable 2 sought to examine how to best assess the competencies of motorcycle riders within a licensing context and to review how this was currently being undertaken in Queensland in comparison with approaches taken elsewhere. Given the breadth of changes that had occurred prior to the commencement of the project and ongoing amendments to processes, the approach to this deliverable was restructured from that specified in the original

deliverable to maximise its usefulness from both policy and operational perspectives. The tasks undertaken for Deliverable 2 were a review of previous recommendations, a review of the literature and consultations with motorcycle licensing and training experts regarding best practice in competency-based training and assessment and, finally, development of an evaluation framework for the CAP.

1.1 AIMS AND SCOPE

Deliverable 2 sought to examine how to best assess the competencies of motorcycle riders within a licensing context and to review how this was currently being undertaken in Queensland in comparison with approaches taken elsewhere. The citation details and aims and scope of each task undertaken for Deliverable 2 are presented below.

Haworth, N. & Rowden, P. (2011). *Review of Q-Ride reform implementation (Deliverable 2.1)*. CARRS-Q report to Transport and Main Roads.

The aim of Deliverable 2.1 was to review the present status of implementation of the recommendations made in the Christie et al. (2006) report and systematically addresses reform recommendations of the Christie et al. document with the aim of establishing:

- How these issues have been addressed by the department; and,
- Whether the approach taken is consistent with the recommendations made by Christie et al. (2006).

Haworth, N. & Rowden, P. (2011). *A review of developments in best practice for motorcycle competency-based training and assessment: comparisons to Q-Ride (Deliverable 2.2a)*. CARRS-Q report to Transport and Main Roads.

The aim of Deliverable 2.2a was to review competency-based motorcycle rider training and assessment in order to:

- Examine recent developments in the literature;
- Identify best practice for CBTA for motorcyclists; and,
- Ascertain if current Q-Ride assessment competencies are both necessary and sufficient to ensure safe motorcycle riding.

Rowden, P., Haworth, N. & Buckley, L. (2011). *Motorcycling competencies – consultation with national and international motorcycle training and licensing experts (Deliverable 2.2b)*. CARRS-Q report to Transport and Main Roads..

The aims of Deliverable 2.2b were to:

- Obtain the views of national and international experts regarding which specific riding competencies within a CBTA framework may either improve or negatively impact on the safety of riders once licensed; and

- Seek evidence from national and international experts to support their opinions.

Rowden, P. & Haworth, N. (2011). *Comparing Q-Ride competencies with best practice: summary of research findings.* CARRS-Q report to Transport and Main Roads.

The aim of Deliverable 2.2c was to compare the riding competencies contained within Q-Ride to those competencies purported to represent best practice in competency-based motorcycle rider training and assessment.

Haworth, N., Rowden, P., Wishart, D. & Buckley, L. (2010). *Deliverable 2.3 - Implications of findings for further refinement of the Consistent Assessment Process (CAP).* CARRS-Q report to Transport and Main Roads.

The aim of Deliverable 2.3 was to document outcomes from an internal workshop held by the CARRS-Q research team to discuss implications of the research findings to date for possible further refinement of the CAP.

Haworth, N. & Greig, K. (2011). *Development of a framework for ongoing review and improvement of the Consistent Assessment Process (CAP).* CARRS-Q report to Transport and Main Roads.

The aims of Deliverable 2.4 were:
- Reviewing the outcomes of Deliverable 2.1 to examine current review processes incorporated in CAP;
- Identifying best practice in program review from a variety of different programs and the literature;
- Writing a preliminary draft framework;
- Internal review by CARRS-Q staff;
- Seeking external feedback and incorporating feedback; and
- Documenting the proposed framework.

1.2   STRUCTURE OF THIS REPORT

The methods used to undertake the research for the relevant deliverables are described within each relevant Chapter. Chapter 2 reviews the Q-Ride reform implementation (Deliverable

2.1). Chapter 3 is a review of developments in best practice for motorcycle competency-based training and assessment with comparisons to Q-Ride (Deliverable 2.2a). Motorcycling competencies and the consultation with national and international motorcycle training and licensing experts (Deliverable 2.2b) is described in Chapter 4. Chapter 5 examines the implications of findings for further refinement of the Consistent Assessment Process (CAP) (Deliverable 2.3), and Chapter 6 proposes an evaluation framework for the CAP (Deliverable 2.4).

2.   REVIEW OF Q-RIDE REFORM IMPLEMENTATION

This summarises Deliverable 2.1, *Review of Q-Ride reform implementation* (Haworth & Rowden, 2009). The aim of Deliverable 2.1 was to review the status of implementation of Reforms 3, 4, 5, and 6 recommended by Christie, Harrison and Johnston (2006) in their report for Queensland Transport (QT) entitled *Q-RIDE Curriculum Reform* in relation to how these issues have been addressed by Queensland Transport (now TMR) and extent to which the approach taken was consistent with the recommendations.

It should be noted that differences in the use of terminology between Christie and his colleagues and others have contributed to confusion and apparent disagreements. Specifically, Christie et al. use the term curriculum in a generic manner to identify learning outcomes that are addressed in a training program (similar to the way that others might use the term competencies). Others (including TMR) tend to use curriculum to refer to a formal document that specifies learning processes and the activities to be undertaken, time allotted and so on. Christie et al. also use the term competencies to apply to desired rider behaviours, regardless of how they are assessed. Others (including TMR) tend to be stricter in their use of the term, reserving it for identified target behaviours in a CBTA approach. Related to their wider use of the term competencies, Christie et al. also describe licence training and testing systems in some other parts of Australia as CBTA approaches, despite the use of licence tests in these systems.

Reform 3 related to reforming the curriculum specifications for Q-Ride. Deliverable 2.1 concluded that Reform 3 was implemented with the introduction of the CAP which includes a breakdown of each of the competencies specified in the Q-Ride Competency Standards document (Queensland Transport, 2007) and the requirement that rider trainers sign off on each group of sub-competencies when assessed.

Reform 4 refers to the need to 'train the trainers' in delivery of Q-Ride and the related assessment protocol. Deliverable 2.1 concluded that whilst Q-Ride rider trainers have been provided with a resource to assist them in the application of the CAP, it appears that no formal face-to-face training program was implemented by TMR to ensure rider trainers were initially familiar with the specific requirements of the CAP upon introduction. Informal training is also provided annually at the Q-Ride Industry Development Day held at the Mt Cotton Training Centre. Remedial action in the form of auditor feedback is provided to trainers during the training and assessment audit by TMR (which occur at least every second year according to the audit guidelines) to assist in correcting any curriculum delivery and assessment issues. The potential problem with this approach is that incorrect training and assessment or non-compliance may happen in the interim.

Reform 5 recommended that suitable guidelines for training ranges be developed and enforced by Queensland Transport. In Deliverable 2.1, it was noted that TMR now requires RSPs to submit specifications of off-road training sites (including a map of location and photographs) at the time of accreditation. In addition, the RSP is required to provide diagrams

showing that all the off-road manoeuvres can be comfortably laid out in the space provided. This is further inspected at the time of a training and assessment audit and non-compliance duly addressed by issue of Corrective Action Requests (CARs). As part of Reform 5 it was also recommended that legal contracts be drafted between Queensland Transport and RSPs to formalise expected standards of performance and associated sanctions for breach of such standards. The Queensland Government response to the Parliamentary Travelsafe Inquiry rejected this recommendation as it deemed that existing accreditation processes were sufficient. Christie et al. also recommended the creation of a Chief Motorcycle Instructor position with extensive expertise to oversee Q-Ride. This has not taken place to date. It was also recommended that additional costs to administer Q-Ride should be recouped from RSPs via a competency certificate issuing fee or a flat annual fee. To date neither of these options have been implemented.

Recommendations regarding audits appear to have been addressed with increased requirements for auditing RSPs (annually) and individual rider trainers (every 2 years). For RSPs this includes scheduled compliance audits, training and assessment audits, records maintenance audits, and non-compliance audits. Reform 6 also recommended that Operational Reviewers should be granted the power to issue on-the-spot Corrective Action Requests. According to TMR, auditors currently have the power to do this.

3. REVIEW OF DEVELOPMENTS IN BEST PRACTICE FOR MOTORCYCLE COMPETENCY-BASED TRAINING AND ASSESSMENT

This section summarises Deliverable 2.2a, *A review of developments in best practice for motorcycle competency-based training and assessment: comparisons to Q-Ride* (Haworth & Rowden, 2011). The report provides a detailed review the literature on competency-based motorcycle rider training and assessment in order to identify best practice for CBTA for motorcyclists; and ascertain if current Q-Ride assessment competencies are both necessary and sufficient to ensure safe motorcycle riding. This Chapter provides a summary of that report.

The review of the literature found that most rider training programs are of a set duration with a summative skills test for assessment and therefore do not qualify as CBTA. Therefore it was not surprising that no evidence for any effect of CBTA on safety for motorcyclists or indeed car drivers over and above traditional licence testing was found. This is primarily due to the lack of research and the difficulties associated with empirical evaluation. It was also established that CBTA needs to be considered in the context of the broader licensing system to maximise learning opportunities over time. Motorcycle rider licensing systems dictate how often training should take place during an individual's riding career and, in a graduated system, to what extent training at each stage should be applied and what factors should be incorporated in training programs to meet licensing requirements. The licensing system essentially specifies what is taught in training in order for trainees to pass the assessment, hence the importance of assessment standards that predict subsequent safety outcomes. However, the unfortunate paradox currently exists that it is unknown which specific competency-based assessment components for motorcycling indeed provide a protective effect and which do not.

Given the lack of evaluations of safety outcomes, best practice for CBTA in rider licensing and training cannot be clearly identified. For this reason, the components of three well-accepted existing training and licensing programs or state-of-the-art new programs were therefore compared with Q-Ride. These programs were: the US Motorcycle Safety Foundation Basic Rider Course; the Initial Rider Training Project model from Europe; and the Victorian motorcycle training and licensing program in Australia. It was found that the elements of Q-Ride competencies are reflected in common practice in the other three motorcycle training and licensing programs reviewed. To this end, it can be concluded that the current Q-Ride competencies are necessary inclusions in novice rider training and licensing. However, the information reviewed suggests that the current competencies are not sufficient. Further important aspects may be added to Q-Ride (or further elaborated upon) to ensure training provides a basis for safe riding in the traffic environment once licensed. Specifically, Q-Ride may benefit from more detailed focus on developing competencies regarding:

- Hazard perception;

- Progression to on-road riding and developing roadcraft skills through on-road experience in a range of situations; and,

- Attitudes to risk-taking.

Furthermore, as Q-Ride is placed within an overarching licensing system, there is scope to enhance when training and assessment need to be undertaken (in a graduated manner) during the initial stages of riding. Developing separate pre-learner and provisional licensing courses for motorcyclists would require reconsideration of the appropriate placement of riding competencies within these courses, but would provide scope for more focus on hazard perception, on-road experience and risk-taking. This has potential to maximise the information retained from training in order to enhance the safety of riders.

4. MOTORCYCLING COMPETENCIES - CONSULTATION WITH NATIONAL AND INTERNATIONAL MOTORCYCLE TRAINING AND LICENSING EXPERTS

As part of Deliverable 2.2b of this project (Haworth, Rowden & Buckley, 2011), 18 national and international experts responded to a request to provide feedback relating to seven core questions regarding motorcycle training and licensing as well as two Q-Ride documents: *Q-Ride Competency Standards* (Queensland Transport, 2007), and *Q-Ride Consistent Assessment Process* (Queensland Transport, 2008b). The experts from 10 countries included academic researchers in motorcycle safety and rider/driver training; government administrators of rider licensing systems; and members of road safety organisations.

The overwhelming theme apparent from the responses of the entire sample was that *there is no clear evidence to show that particular competencies result in subsequent safety for riders*. Where competencies were suggested as beneficial by most respondents their rationale was based on either:

1. Factors that have been shown to contribute to crashes (and riders should therefore learn how to manage or avoid them);

2. Personal opinion based on prior experience (i.e. this is the way we do it); or

3. Competencies that relate to licensing issues other than direct crash involvement (e.g. committing an illegal act).

Collectively, these comments reflect how rider training and licensing systems have been developed to date. These comments also reflect the paucity of empirical evidence regarding the predictive validity of any particular existing competencies. Broader licensing issues such as the structure of graduated training and licensing for motorcyclists and whether or not training should be mandated within such a system were also considered. No clear consensus was expressed for these issues. In addition, it appears that CBTA for rider training and licensing does not have a high level of support from experts although some can see its value for individual learning, at least at a conceptual level.

In conclusion, experts held varied views on what constitutes an ideal framework for rider training and assessment. In essence, best practice for each expert may merely reflect their personal involvement with these issues rather than evidence-based practice. On this basis it appears that competency standards for assessment may not be able to be aligned with what should ideally be learnt in regard to rider behaviour. There was support for the inclusion of basic riding skills and roadcraft.

Full details can be found in the report Deliverable 2.2b, *Motorcycling competencies – consultation with national and international motorcycle training and licensing experts*, (Haworth, Rowden & Buckley, 2011). Deliverable 2.2c, *Comparing Q-Ride competencies*

with best practice: summary of research findings, (Rowden & Haworth, 2011) combined the results of Deliverables 2.2a and 2.2b.

5. OPPORTUNITIES FOR FURTHER REFINEMENT OF THE CONSISTENT ASSESSMENT PROCESS (CAP)

The following sections of this report focus on better understanding how the Consistent Assessment Process is operating and how it can be improved. In Deliverable 2.3, the *Implications of findings for the further refinement of the CAP* were developed at a workshop of the CARRS-Q project team where the outcomes of Deliverables 2.1 and 2.2 were examined and implications for the future refinement of the CAP were identified, discussed and documented. The following conclusions were reached:

- There is no evidence to support removal of any of the current competencies in Q-Ride;

- Further research is needed on how to effectively assess cognitive and attitudinal skills for inclusion in the competencies;

- There appears to be some conceptual conflict between the standardisation imposed by the CAP and the flexibility in curricula that has contributed to confusion in the industry;

- Ongoing monitoring of injury crash records of graduates may be useful to identify RSPs which are performing significantly worse than others and also to examine if the nature of crashes suggests that additional competencies need to be addressed; and

- In the context of any future potential changes to the licensing system, the CAP may need to be revisited to reassign competencies across licensing stages (e.g. some may be pre-learner and some pre-licence) and incorporate revision of competencies from earlier stages.

The workshop concluded that the content of the competencies that are assessed appears to be supported by the literature and expert opinion, although potential exists to expand the competencies to better measure higher order skills such as hazard perception and attitudes to risk taking. The program of research to date has not examined the *application of the CAP*. That is, it remains unknown if RSPs and ARTs are indeed following the process of assessment to the optimal degree or whether the process itself is optimal from a pragmatic point of view (i.e. any room for improvement in a practical operational sense or if the procedure is well understood by RSPs and ARTs).

The workshop agreed that the following steps needed to be undertaken as part of developing the framework for ongoing review and improvement of the CAP:

1. Identifying issues affecting the CAP;

2. Examining audit processes;

3. Identifying potential improvements; and

4. Developing a proposed framework.

5.1 IDENTIFYING ISSUES AFFECTING THE CAP AND AUDITING

Two sources of information regarding the issues affecting the CAP were examined by the researchers. The first source of information was the comments of Registered Service Providers that were provided as part of the consultations undertaken regarding both possible pre-licence programs and interventions to reduce risk taking and improve hazard perception. The second source of information was discussions with TMR staff regarding the history of changes to Q-Ride and their effects on the CAP.

During the interviews with stakeholders regarding pre-learner training and interventions to address risk taking and hazard perception, RSPs expressed unsolicited concerns regarding being audited against the CAP rather than being audited against their accredited programs which had been approved as part of their Q-Ride accreditation. This raises the issue of distinction between standardised curricula versus standardised assessment criteria. Whilst the CAP represents a set of standardised assessment criteria for Q-Ride, no standardised curriculum exists. Hence, confusion may arise between TMR and the RSPs regarding what the audits aim to do. Whilst this issue is not central to the agreed program of research, it has serious implications for the refinement of the CAP. That is, if the content of the CAP is refined but the process of application is not, then outcomes may be compromised.

One of the major issues affecting the CAP, identified from discussions with TMR and review of documentation, was the large number of recent changes in the regulatory framework. Some of the changes occurred in response to the recommendations of the 2007 Travelsafe Inquiry into Q-Ride, while others related to modifications to motorcycle licensing requirements. The changes to the rules also affected what the auditors were required (or allowed) to audit.

The second major issue identified as affecting the CAP was the volatility in the system. A large number of RSPs from the past are no longer trading but about 18% of these RSPs went on to trade under a different company name. The relationship between ARTs and RSPs is also complex and changing. Some RSPs employ many trainers, while some ARTs work for multiple RSPs. Therefore individual trainers are the unit of auditing in reality, rather than the RSP per se.

Several challenges to the auditing process were also identified. Most audits did not cover all aspects of the CAP because auditors could only audit the activities that were being undertaken on the day that they visited. In addition, the restrictions on the availability of TMR auditors, resulting from workloads associated with auditing other schemes, meant that the frequency of audits recommended in the audit guidelines was difficult to maintain.

The authors believe that another factor influencing the further refinement of the CAP is the extent to which any proposed changes are consistent with the underlying principles of CBTA (and the extent to which maintaining consistency is considered to be important).

Some of the impetus for the introduction of the CAP came from public concern (as documented in the Travelsafe Inquiry report, Queensland Parliamentary Travelsafe Committee, 2007) that Q-Ride was not providing a sufficiently consistent and rigorous system for obtaining a motorcycle licence. The concerns relating to consistency appeared to be based on perceptions that RSPs were not being sufficiently overseen by government and that the financial interests of RSPs and associated motorcycle retailers were providing an incentive to certify riders as competent even if riders were not truly competent. The concern about insufficient rigour in Q-Ride related to riders completing Q-Ride within one day. This concern is fundamentally at odds with the principles of CBTA. According to CBTA, training has no fixed duration but depends on prior learning and the pace at which learners are able to demonstrate the required competencies. Any further refinement of the requirements undertaken to make Q-Ride more consistent with public expectations of a licensing, training and assessment process may result in it being less of a CBTA approach, and more similar to a traditional training and testing system.

6. DEVELOPING A PRELIMINARY DRAFT FRAMEWORK FOR ONGOING REVIEW AND DEVELOPMENT OF THE CAP

This section summarises Deliverable 2.4, *Development of a framework for ongoing review and improvement of the consistent assessment process (CAP).* The tasks for Deliverable 2.4 included:

- Reviewing the outcomes of Deliverable 2.1 to examine current review processes incorporated in CAP;
- Identifying best practice in program review from a variety of different programs and the literature;
- Writing a preliminary draft framework;
- Internal reviewing by CARRS-Q staff;
- Seeking and incorporating feedback; and
- Documenting the proposed framework.

6.1 EXAMINATION OF AUDIT PROCESSES

The major mechanism in place for reviewing the CAP is the auditing of RSPs and their Accredited Rider Trainers (ARTs). The Q-Ride Audit Guidelines (Queensland Transport, 2008a) outline the types of audits to be undertaken, their objectives, scope, participants, frequency, duration, fee, and non-compliance requirements. An overview of the audit system is provided in Table 2. The training and assessment audits are arguably of the greatest relevance to ongoing review and improvements to the CAP. As discussed later, a comprehensive system of monitoring audit frequencies and outcomes would provide a useful review process and method for identifying future improvements to the CAP.

6.2 IDENTIFYING BEST PRACTICE IN PROGRAM REVIEW

While the CAP focuses on improving reliability, consistency, fairness and compliance in assessment, most of the material available on reviews of motorcycle training and testing programs addresses whether the program was successful in lowering subsequent motorcycle crash risk. Many of these approaches to review are not suited to a CBTA system. Some program reviews have attempted to measure the validity of assessment components, whether the components are items on a formal test or competencies assessed in CBTA. These reviews have generally been unable to clearly link test items or competencies with crash risk and have often taken the approach of asking for expert opinion, because of the difficulties in collecting objective evidence. This approach was adopted in Deliverables 2.2a and b of this project.

Table 2. An overview of the audits specified in the Q-Ride Audit Guidelines (Queensland Transport, 2008a)

Type of audit	Scope	Frequency	Audit by	Duration	Fee	Non-compliance
Entry	Interviews, site and equipment inspections	Initial	TMR	4-6 hrs	Nil	Rectify prior to approval (except for minor non-comp)
Scheduled compliance	All documents and records relevant to management system	Annual	Reg'd Q-Ride auditor	8 hrs	As negotiated	14 days to rectify. Ongoing non-comp may lead to enforcement action
Training and assessment	Observation of T&A, inspection of training records	RSP – at least annually ARTs – at least every 2 years	TMR	Dependent on time taken to complete CAP	Nil	Auditor may intervene if learner safety or outcome affected 14 days to address other non-comps
Non-compliance	Depends on extent of non-compliance	If reasonable belief that non-complying	Reg'd Q-Ride auditor	Depends on seriousness of non-compliance	As negotiated	14 days to rectify. Ongoing non-comp may lead to enforcement action
Record maintenance	Inspection of Q-Ride records	As determined by TMR	TMR	Depends on number of records	Nil	14 days to rectify. Ongoing non-comp may lead to enforcement action
Exit	All documents and records relevant to management system and security of training records	At program exit	TMR	2-3 hrs	Nil	Immediate rectification of non-comp. Continuation of non-comp may lead to enforcement action

6.3 EVALUATION FRAMEWORKS AND THEIR APPLICABILITY TO THE CAP

In general, evaluation frameworks have been developed for measuring the effects of programs which have clearly identified goals, objectives and strategies as summarised by Sherrard (1995).

- The **goal** of road safety programs is often to reduce the number of crashes or their severity. An **outcome evaluation** measures the extent to which the program succeeded in achieving its goal(s).

- The **objectives** of road safety programs are often to reduce the frequency of risk factors which lead to crashes or increase crash severity (e.g. speeding). An **impact evaluation** measures the extent to which the program succeeded in achieving its objectives.

- The program **strategies** are the activities designed to contribute to the changes in the risk factors (e.g. education and promotion). A **process evaluation** measures the extent to which the program strategies were implemented as planned.

The CAP is a strategy which is designed to contribute to the objectives of an overarching program, which is Q-Ride. The objectives of Q-Ride are stated as "to ensure participants reach a demonstrated level of skill and proficiency as a motorbike rider" with a goal of "enhancing road safety" (both quotes from Q-Ride web page http://www.tmr.qld.gov.au/Licensing/Getting-a-licence/Motorbike-licence/Q-Ride.aspx). If the usual evaluation framework was applied to the CAP, a process evaluation would examine whether the CAP provides a consistent process for assessment of Q-Ride applicants, an impact evaluation would examine whether the CAP ensures that Q-Ride applicants reach a demonstrated level of skill and proficiency as a rider, and an outcome evaluation would judge whether Q-Ride as a whole is reducing the crash and injury risk of new riders.

6.4   PROPOSED FRAMEWORK FOR ONGOING REVIEW AND IMPROVEMENT OF THE CAP

The proposed framework for ongoing review and improvement of the CAP comprises a process evaluation component (improvements to recording and monitoring of audit information) and potential extensions to monitor Q-Ride impact and outcomes.

6.4.1 Process measures

Currently, the main process for providing information for ongoing monitoring and review of the CAP is the range of audits specified in the Q-Ride Audit Guidelines (Queensland Transport, 2008a), particularly the training and assessment audits. To maximise the usefulness of the information gathered in these audits, the following recommendations are made to facilitate ongoing monitoring and identification of trends to allow steps for improvement:

1. Development of a clear coding framework to simplify analysis of audit results;

2. Clear labelling and definition of fields in the audit database;

3. Quality control on data entry;

4. Regular monitoring of extent of compliance with the CAP;

5. Development of a documented audit strategy including RSP and ART sampling designs; and

6. Production of an annual summary of audit results that summarises audit frequencies and compares these with those specified in the guidelines, identifies any issues that have arisen in terms of the CAP, and suggests strategies to address these.

6.4.2 Potential for impact and outcome evaluation

The potential exists to link some of the data collected as part of the CAP with crash information for use in monitoring outcomes. For example, information from the CAP sheets that are signed and dated by ARTs could be used to measure the time taken to be certified as competent for particular competencies and compare this with crash information for the same rider. This would suggest whether the time taken to acquire a competency was associated, and in what way, with crashing in general or particular types of crashes. This could then provide input into improvements to Q-Ride and the CAP. The lack of a systematic and ongoing measure of the skill and proficiency of riders limits the potential for impact evaluation. However, if an opportunity arose to collect this information, then linking it to CAP information might provide some useful insights into how well particular competencies were contributing to rider skill and proficiency.

One of the current constraints to interpreting any results from ongoing reviews of the CAP is the frequency with which changes have been made to motorcycle licensing, Q-Ride, the CAP or the auditing process (e.g. which items are recorded) in recent years. Results from several years ago may seem to have limited relevance because of these changes. This, however, underlines the need for systematic process evaluation to include clear documentation of system changes and their implications.

7. CONCLUSIONS

Q-Ride is a competency based training and assessment approach to motorcycle licensing. This approach is uncommon across Australia and internationally and consequently there is little published evidence comparing the safety outcomes of this approach with more traditional training and testing regimes. The results of the literature review and expert consultation does suggest, however, that the skills that are trained and assessed in Q-Ride are those which are necessary for safe riding. Training and assessment of higher-order skills related to hazard perception and risk management are also needed but are not satisfactorily covered in either Q-Ride or the traditional training and testing regimes across the world. These represent the challenge in improving motorcycle licensing, training and assessment.

The delivery of Q-Ride by private providers has been associated with pressure to introduce systems to ensure validity and equity, and led to the introduction of the Consistent Assessment Process (CAP) and other changes to Q-Ride. It is difficult to assess the success of the CAP from currently collected audit data and adequate resourcing is needed to allow improvements in monitoring processes. The potential exists to link some of the data collected as part of the CAP with crash information to allow an evaluation of Q-Ride in terms of its effects on motorcycle rider crash and injury risks.

REFERENCES

Christie, R., Harrison, W., & Johnston, D. (2006). Q-Ride curriculum reform. Report to Queensland Transport. Unpublished.

Haworth, N. & Greig, K. (2011). Development of a framework for ongoing review and improvement of the consistent assessment process (CAP). CARRS-Q report to Transport and Main Roads.

Haworth, N. & Rowden, P. (2009). Review of Q-Ride reform implementation. Deliverable 2.1. CARRS-Q report to Transport and Main Roads.

Haworth, N. & Rowden, P. (2011). A review of developments in best practice for motorcycle competency-based training and assessment: Comparisons to Q-Ride. Deliverable 2.2a. CARRS-Q report to Transport and Main Roads.

Haworth, N., Rowden, P. & Buckley, L. (2011). Motorcycling competencies – Consultation with national and international motorcycle training and licensing experts. Deliverable 2.2b. CARRS-Q report to Transport and Main Roads.

Haworth, N., Rowden, P., Wishart, D. & Buckley, L. (2010). Deliverable 2.3 - Implications of findings for further refinement of the Consistent Assessment Process (CAP). CARRS-Q report to Transport and Main Roads.

Queensland Parliamentary Travelsafe Committee. (2007). Report of the inquiry into Q-RIDE. Report No. 47. Brisbane: Legislative Assembly of Queensland. Parliamentary Travelsafe Committee.

Queensland Transport (2007). *Q-Ride Competency Standards.* Brisbane (http://www.transport.qld.gov.au/resources/file/eb27ba4f9345add/Pdf_qride_competency_standards.pdf)

Queensland Transport (2008a). Q-Ride Audit Guidelines. Version No. 2. December 2008. Brisbane: Queensland Transport.

Queensland Transport (2008b). *Q-Ride Consistent Assessment Process.* Brisbane (http://www.transport.qld.gov.au/resources/file/eb93ce461df14b5/Doc_qride_cap_v3_dec08.doc)

Rowden, P. & Haworth, N. (2011). Comparing Q-Ride competencies with best practice: Summary of research findings. Deliverable 2.2c. CARRS-Q report to Transport and Main Roads.

Rowden, P., Haworth, N. & Buckley, L. (2011). Motorcycling competencies – consultation with national and international motorcycle training and licensing experts (Deliverable 2.2b). CARRS-Q report to Transport and Main Roads.

Sherrard, J. (1995). Issues in program evaluation. In J. Ozanne-Smith and F. Williams (eds.) *Injury Research and Prevention: A text.* Melbourne: Monash University Accident Research Centre. (pp.258-261)