Road Safety Resource for Motorcyclists Riding the Great Ocean Road

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ABSTRACT

The Great Ocean Road is one of Australia's most popular scenic drives. It attracts many motorcyclists seeking the enjoyment and challenge of the road's many curves. However, the road can be unforgiving to riders who are not prepared for the hazards. As part of a package of measures to improve the safety of the road, a resource including a DVD and website has been developed to raise awareness of the characteristics of the road which cause problems to riders and ways to avoid crashing. The information is evidence-based and presented in a way that is credible to riders. The DVD creates interest through a story which aims to engage a broad target audience. The resource will be evaluated to determine if this type of information can be effective in communicating safety messages to riders.

BACKGROUND

Victoria is the southern-most state in mainland Australia. Motorcycle touring around the state has become a popular pastime for motorcyclists. The Great Ocean Road is a major tourist route of approximately 240km which follows the rugged South West Coast of Victoria starting near the town of Torquay and finishing near Warnambool. The Great Ocean Road is one of the most popular touring routes for motorcyclists in the country and considered to be one of the most dangerous.

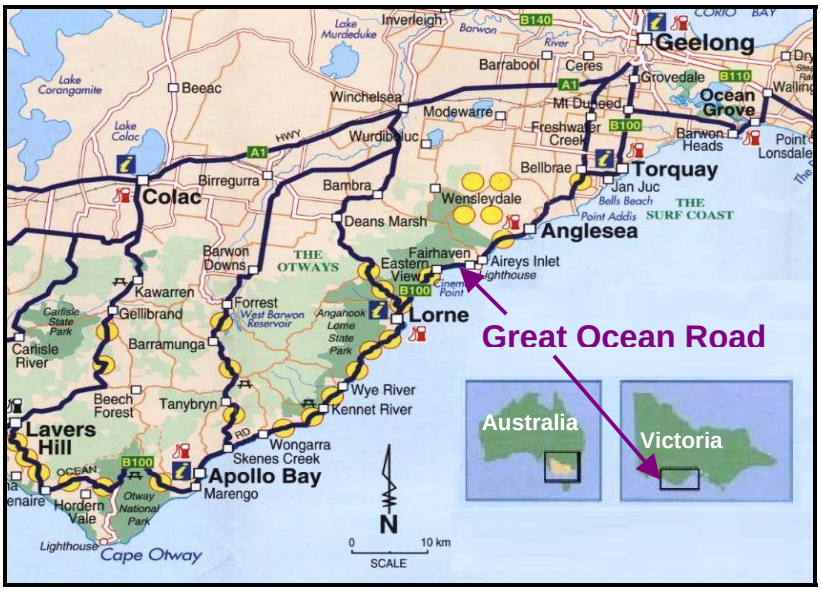

Figure 1. Great Ocean Road located along the Southwest coast of Victoria. Yellow circles are locations with a high motorcycle crash rate (Source: Barwon RoadSafe).

The road began construction in 1918 providing work for Australian servicemen returning from the First World War. The road to Apollo Bay was completed in 1932 and has since serviced the major tourist towns along the coast. It is particularly busy during the summer months with holiday makers, who may be unfamiliar with the road, visiting in large numbers for the combination of rugged coastal cliffs, expanses of sandy beaches and clear ocean water. The road is particularly popular with motorcyclists because it provides the experience of every type of bend imaginable amid beautiful surroundings.

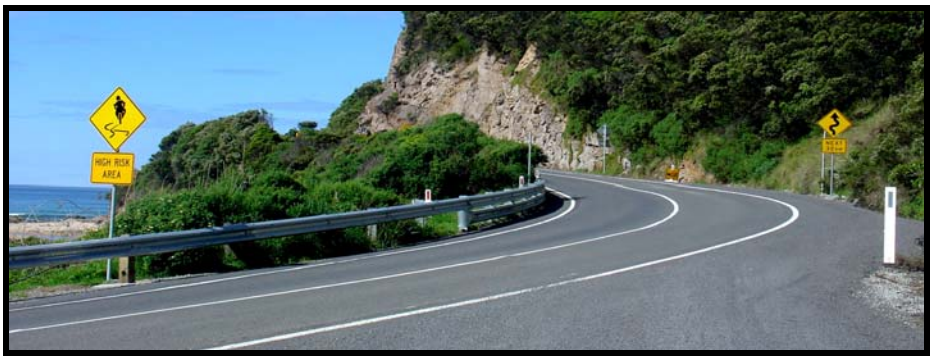

Figure 2. High risk motorcycle area (including warning signs) with numerous blind and compound curves.

Motorcycle Crashes on the Great Ocean Road

In the last 10 years, there were 342 injuries (VicRoads, 2005) from motorcycle crashes on this one road representing around $AUD80 million in crash costs. Motorcyclists accounted for almost half of all serious injury crashes on the road. Most of the crashes are concentrated on the 73km section from Anglesea to Apollo Bay. This section contains diverse topography including areas of eucalypt forest, beach locations with bridge crossings over river mouths and sections where the road is cut out of the cliff face above the coast.

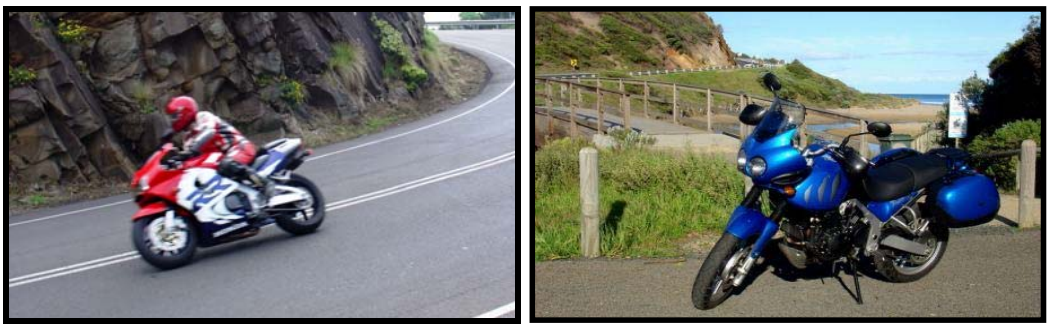

Figure 3. Cliff (left panel) and river mouth (right panel) locations of the Great Ocean Road

Haworth, Mulvihill, and Symmons (2003) noted that a hazard can be "…any object, situation, occurrence or combination of these that introduces the possibility of the individual road user experiencing harm" (p.7). The Great Ocean Road contains many hazards related to the difficult terrain the road covers. This is compounded by high

volumes of tourist traffic with unpredictable driver behaviour and distractions like coastal views or other scenery. There are also issues relating to fatigue, tiredness and vigilance as a consequence of motorcyclists travelling long distances to enjoy a particularly challenging ride.

Motorcycle crash characteristics include:

- 65% of crashes occurred on weekends;
- 64% were single-vehicle crashes;
- The vast majority occurred between the hours of 10am to 6pm;
- 40% did not collide with any object;
- 32% collided with a fixed object (e.g., trees, cliff wall); and
- 8% hit a movable object; and
- 20% collided with another vehicle.

In August 2003, the Victorian Motorcycle Advisory Council (the body established to advise the State Government on motorcycling issues) conducted a workshop to identify road safety issues for motorcyclists on the Great Ocean Road and to recommend actions to improve rider safety. The workshop included expert riders and trainers with considerable experience of the road in all conditions as well as representatives from local rider clubs, local government and local police. Several recommendations relating to improved road conditions, advisory signs and turn out opportunities for slow moving traffic were recommended. However, other measures to increase rider awareness of hazards on the road were also considered to be critical components of a road safety action plan for the route. One of the recommendations was to develop a multimedia information resource for riders (distributed free of charge) raising awareness of the hazards. This paper describes the approach taken in developing a pilot road safety resource including a DVD and website on the Great Ocean Road. The DVD has been completed to draft stage. The website, when complete, will provide written information, video grabs, and still images promoting the DVD and supporting the road safety messages.

RESOURCE DEVELOPMENT PROCESS

The resource essentially focuses on hazard awareness. It was not intended to comprise a training video, but rather raise awareness and understanding of the risks to motorcyclists riding the road and provide advice on strategies and techniques to avoid the types of crashes that occur on the road. The DVD and website will cover issues relating to the road characteristics, road surfaces, road terrain, road alignment and sight distance as well as other hazards specific to the area such as environmental conditions and tourist behaviour. Other information of relevance includes places to rest or take breaks, motorcycle amenities and approximate trip times. General road safety issues such as enforcement, fatigue, speeding, and alcohol will also be covered. The resource will include a DVD with interactive menus and a dedicated internet site. It builds on a brochure produced by the Barwon Community Road Safety Council that highlights hazards on the road. The brochure has exceeded expectations in terms of circulation.

The resource must balance a number of trade-offs in terms of exposure and safety. A video that promotes the Great Ocean Road as a destination for motorcyclists, especially if it encourages inexperienced riders to tour the area, would not be desirable because it could increase crashes regardless of the safety messages.

However, it must have appeal for the audience in order for them to watch and take on the messages. A number of steps were undertaken to develop the content of the resource and achieve the correct balance including:

- identification of target audience, acceptable messages, and credibility of presenters with the audience;
- evidence-based evaluation of crash types and high risk locations;
- expert and local consultation on important factors contributing to crashes in the areas; and
- detailed assessment of qualified and experienced communications companies to produce engaging scripts, video footage and the website.

A number of these tasks linked in with other projects undertaken to meet the objectives of the Victorian Motorcycle Road Safety Strategy 2002 - 2007; part of the Victorian Government's *arrive alive!* road safety plan.

Identification of target audience and safety messages

In 2004/05, VicRoads (Victoria's state road authority) examined methods of providing safety information that is better received by riders. Market testing of different types of motorcycle messages and media found that many riders, irrespective of age, gender or background, are interested in motorcycle-specific media (particularly magazines and websites), seek out motorcycle-related information activities and events, and regularly visit motorcycle shops to browse and dream.

The most important motorcycle-related safety issues were considered to be lack of driver awareness of riders, poor road conditions, need for improved training and importance of protective gear. Messages related to excessive speed, exposure management or motorcycle choice were less acceptable to riders.

The use of credible presenters received the most positive reaction as a method for communicating road safety messages to motorcyclists. It is essential, however, that the presenter is an experienced and respected rider. In particular, the Victoria Police Solo Riders were considered to be credible and respected presenters. The most suitable media for communicating safety messages to motorcyclists generally are motorcycle magazines, the internet (including email) and through motorcycle retailers. There was also considerable opportunity to reach riders through visual materials such as DVDs.

Information from this research influenced the way the DVD was developed, the messages that were employed, and the use of presenters in the video (including a Solo police officer). This information is also highly relevant for the distribution and promotion of the DVD once complete.

The majority of riders injured on the Great Ocean Road are male and travel from other areas, mostly Melbourne, and are often unfamiliar with the route. However, numbers of riders injured are evenly spread across age groups from 25 years to 50 years. This results in a relatively broad target group. The characters in the DVD (described later) were selected to be representative of a diverse target demographic with a difference between the riders in age, style (personality and appearance) and motorcycle choice.

Evidence-based evaluation of crash types and contributing factors

A number of sections along the Great Ocean Road have been identified as motorcycle blackspot locations. To address blackspot locations around the state, the Motorcycle Blackspot Program was established in late 2002 with projects implemented from early 2003. The program identifies locations with a history of motorcycle crashes and then engages a motorcycle crash investigator to examine police reports and the crash locations to identify contributing factors to the crashes. Some of these crash factors can then be addressed with targeted road and roadside improvements. Other problems are more intractable and need to be addressed by alternative means. The motorcycle blackspot investigations on the Great Ocean Road have aided considerably in identifying the range of factors associated with crashes.

Road based factors identified as potentially contributing to motorcycle crashes on the Great Ocean Road include loose gravel from parking areas, oil or diesel, deteriorated pavement surfaces, uneven bridge joins, debris on the road including rocks and tree foliage, inadequate line markings or curve alignment markers and limited line of sight. These have been found to be particularly hazardous on tight, compound, blind and downhill curves. All of these curve types are commonplace along the road. Road conditions have been improved markedly over the last 2 years. Significant roadwork has improved the road surface, warnings and road delineation. However, many of the hazards for motorcyclists cannot be eliminated and road conditions constantly change, therefore many of the hazards are still frequently encountered.

Inappropriate behaviour or skill errors are commonplace on the Great Ocean Road. This includes drivers as well as riders. While the road carries significant local and commercial traffic, it is still primarily a tourist route. This brings with it many sources of error from road users that are unfamiliar with the road, may have travelled a long distance or are focussed on the views. Errors known to have contributed to crashes include vehicles travelling on the wrong side of the road (e.g., overseas visitors driving on the right hand side of the road), drivers not giving way when pulling out of viewing areas, overtaking in inappropriate areas, tourist buses going wide on corners, racing or simply travelling too fast for the conditions. Many of these issues apply to riders as well as drivers however, the consequences for riders are often more severe.

Expert and local consultation

A project reference group was established for the project to ensure that all stages of development incorporated technically accurate content and appropriate communication with riders. The project reference group included rider trainers, motorcycle user group representatives, an experienced motorcycle crash investigator, a rider member of the local Community Road Safety Council, representatives from the Victorian Motorcycle Advisory Council and representatives from VicRoads. All members had extensive knowledge of the road and conditions that could be encountered.

Local environmental conditions considered to be a factor in crashes include strong winds, wet roads (even on dry days) due to groundwater runoff and seepage, changes in weather, heat in summer and wildlife. Many riders travelling to the area have also been observed to be wearing inadequate protective gear.

Curves were considered to be associated with many motorcycle crashes. The most important factor with curves is the rider's speed and positioning prior to entry. Correct cornering requires early braking and gear changes, and correct lane position. This allows the rider to be prepared for unexpected events. While curves around the Great Ocean Road have good warnings with curve alignment markers and speed advisory signs, extreme road camber, double apexes and decreasing radius corners can easily result in a rider being in the wrong position, gear or speed.

The references group ensured that all critical issues were included in the DVD by provided input to the creative treatment of the DVD, helped to shape the scripts and provided feedback on the draft of the DVD.

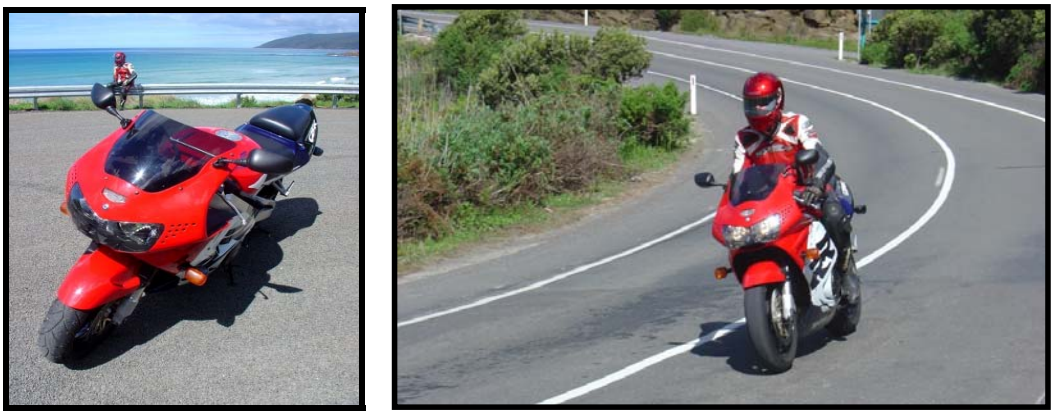

Figure 3. Gravel viewing areas (left panel) and sweeping downhill curves (right panel) on the Great Ocean Road.

Selecting the most appropriate communications company

A rigorous process was undertaken to ensure that the contracted communications company had a highly qualified team with experience of this type of work (including road safety and motorcycle projects), communicated thoughtful and cohesive ideas for presenting safety messages and had a commitment to the safety of crew and other road users during filming. It was also essential that they demonstrated an understanding of the balance between safety messages, acceptability to the target audience, and entertainment value.

RESOURCE DESCRIPTION

Creative Treatment

The creative treatment employed by the communications company was to communicate the critical safety messages through the use of compelling stories and engaging characters. The story takes the viewer on a journey with two riders who lead the audience through the hazards and challenges of the road. During the journey, the two riders come across diverse and entertaining local riders with credibility in the riding community. Each contributes their knowledge of the road in their own way by drawing on their individual experiences.

The film and story follow the two central characters, Tom and Alan. Alan is in his early 30's and rides a sports bike and Tom is in his 40's riding a tourer style bike. This allows the story to appeal to riders in two key age groups with different styles of bikes. The two characters are both experienced riders, but only one of them has ridden the Great Ocean Road and his experience of the road is extensive. There is a fun dynamic between the riders with humour interspersed through the story.

Figure 4. Tom (left) on a touring bike and Alan (right) on a sports bike

Having the two riders provides the opportunity for natural conversation describing the road ahead and drawing on the relevant safety messages which are central to the DVD. It also allows for positive modelling of riding behaviour and technique with views of the second rider reinforcing the correct technique for the viewer.

Conversation at rest stops helps to recap on their experience, interact with other characters and emphasise the need to rest and re-hydrate on the long and tiring ride. Non-riding threads such as trivia from a newspaper are included throughout the video to add colour and interest to the storyline.

Graphics are used to segment and introduce new sections of the DVD. The graphics introduce maps in a satellite style locating the riders on their journey which adds a cinematic style and distances the DVD from training style videos. The graphics also integrate the DVD footage with the design of menus and the packaging as well as the supporting website.

CONCLUSION

The resource was developed using evidence-based information about high risk locations and factors associated with motorcycle crashes to identify key issues. The second critical task was to develop the resource so that it appealed to a diverse target audience and presented factual safety information in a non authoritarian or judgemental style. In this way it differentiates itself from training style educational products. Evaluation methods are being devised in order to determine the effectiveness of the product in terms of hazard awareness, self reported behaviour change and viewing appeal. If this pilot project demonstrates positive road safety outcomes, the concept may be expanded to other popular motorcycle tourist routes in the state.

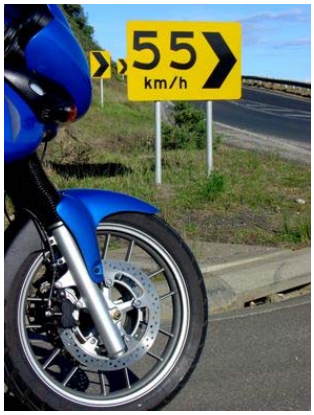

Figure 5. Speed advisory signs and curve alignment markers.

REFERENCES

Barwon Community Road Safety Council. Motorcycling on the Great Ocean Road and the Otway region. Brochure produced by RoadSafe Victoria.

Haworth, N., Mulvihill, C., & Symmons, M. (2003). Hazard perception and responding by motorcyclists – Background and literature review. Report for VicRoads.

VicRoads. (2005). *Road Crash Information System*. Database of police reported crashes in Victoria

Victorian Motorcycle Road Safety Strategy 2002 - 2007. Victorian Government *arrive alive!* road safety strategy.

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Disclaimer: The views expressed in this paper are those of the author and do no represent the views of VicRoads or the Victorian Government