

INQUIRY INTO VULNERABLE ROAD USERS

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Staysafe Inquiry into Vulnerable Road Users

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Vulnerable road users

Motorcyclists can certainly be classified as ‘vulnerable road users’. Indeed, they may well be the most vulnerable (pedestrians excepted). The basic design of a motorcycle has not changed in more than 100 years. Whereas cars have progressive crumple rates, seat belts, airbags and other devices to protect their occupants in an accident, motorcycles have nothing – indeed the brake and clutch master cylinders and switches adorning the handlebars may exacerbate the injuries caused in an accident.

Motorcycle crashes account for 5 per cent of all road crashes in NSW, but 14 per cent of deaths and 9 per cent of injuries.¹ In 2008, there were 8984 single vehicle crashes involving cars,² of which 3172 or 35 per cent resulted in injury and 1.2 per cent in death. There were 1096 single vehicle crashes recorded by the police involving motorcycles, of which 1017 or 92.7 per cent resulted in injury and 2.4 per cent in death – fewer than 5 per cent of them were classified as ‘non-casualty’. That is because when a road-going motorcyclist loses control of his or her machine, he or she is inevitably going to contact something hard, and even a low-speed crash is likely to result in some sort of injury to the rider. The road surface of sharp gravel can quickly cut through bare skin, even to the bone, which is why a high priority needs to be given to the wearing of protective clothing

Most single vehicle motorcycle crashes involve ‘dropping’ the bike – the front or rear wheel loses traction and the rider ends up sliding along the ground, losing skin and potentially fracturing bones or worse.

Motorcycles have good primary safety – on a dry sealed road and under favourable weather conditions they can out-accelerate and out-maneuver a car (often necessary to avoid an accident) - while motorcycle handling, braking, suspension and tyre adhesion have all improved dramatically over the last 25 years. Unfortunately, they are far less

¹ Motorcycle Council of NSW, Motorcycle crash facts 2008.

² Roads and Traffic Authority, Road traffic crashes in NSW 2008.

sure-footed in the wet or on loose, shiny or slippery surfaces, and braking ability also suffers. One in five single-vehicle motorcycle accidents involve gravel, oil on the road, or potholes.

It's often said that on a motorcycle "you have to look out for the car driver" or "it's what the other person does that's the problem." But the statistics don't entirely bear this out. According to the Motorcycle Council of NSW³, single vehicle crashes accounted for 42 per cent of recorded motorcycle accidents and collisions with other vehicles due to the rider's action, 23 per cent. So the total percentage of accidents where only the rider could be blamed for the accident was 65 per cent. That leaves 35 per cent where the driver of the other vehicle was to blame.

One reason for this could be the introduction in 1992 of permanent headlights on for new motorcycles, which has significantly improved the visibility of bikes on the road.

Nevertheless, in any collision between a motorcycle and a car or truck the motorcycle and its rider/ passenger will come off second best.

According to the last Staysafe report on motorcycle safety⁴ motorcyclists are 30 times more likely to be killed in an accident than car occupants (Austroads 1999 quoting Evans 1991). In a fall a helmet (preferably full-face) will protect the head and boots will protect the feet and ankles – but the body is exposed. That's why leather jackets and pants or jeans with built-in body armour are so important to motorcyclists. Nothing can protect a motorcyclist from a high-energy impact, but appropriate clothing can mitigate against gravel rash, friction burns, stripped muscles, fractures and exhaust pipe burns.

While the total number of motorcycle rider/passenger fatalities has dropped by more than 60 per cent since 1986, the figure is still higher than it was 15 years ago. But the

³ *Op. cit.*

⁴ Staysafe committee, aspects of motorcycle safety in NSW: seminar proceedings, September 2005.

number of motorcycles on the road in NSW has increased by more than 50 per cent over the last five years⁵, so the *relative* rate of accidents and injury has fallen. However, more can and should be done to mitigate road casualties involving motorcyclists.

The changing face of motorcycling

Over the last 25 years there have been massive changes both to motorcycles and to the type of person who rides them. Bikes used to be ridden primarily as a cheap form of transport. Now they have become the domain also of older riders, often ‘returnees’ who are buying a motorcycle to recapture the experiences of their youth. Thousands of other people over 40 are also obtaining motorcycle licenses for the first time, with the net result that the average age of motorcyclists is over 40.

Statistics show older riders are far less likely to be involved in serious accidents than those aged under 26. Riders aged over 40 own 57 per cent of registered motorcycles, but in 2008 they accounted for just 35.8 per cent of injury accidents and 39 per cent of fatalities.⁶

The disparity is not just because of the younger riders’ lack of experience, or the ‘recklessness of youth’, although excessive speed for the conditions is a contributing factor in almost half of all single-vehicle crashes. It is also because older riders tend to ride only at weekends, on country roads which are less crowded, and may travel only 5000-8000km a year, compared with 16,000-20,000km for commuter riders.

However, the number of commuter riders is expected to rise with increased traffic congestion and continuing subdued economic conditions. This may mean the number of motorcycle casualties – which has remained comparatively static since 1991 – will start rising again. Motorcycles are (comparatively) cheap to run; easier to park than

⁵ According to the Australian Bureau of statistics, there were 106,287 motorcycles registered in NSW in 2004 and 162,836 in 2009.

⁶ Roads and Traffic Authority, Road traffic crashes in New South Wales 2008, p.75.

cars; and can travel in bus lanes, which is a big selling point. Many motorcycle dealers are actively promoting these advantages of riding to work on a bike.

Some 9000 commuter bikes are small-capacity ‘twist and go’ scooters. Scooters are easy to ride, economical to run, provide greater protection from the weather than a conventional bike, and licences to ride them are easier to obtain than full motorcycle licences. However, most scooter riders do not wear full protective clothing, making them particularly vulnerable in the event of an accident.

In fact, the type of clothing worn by the various categories of rider varies greatly. The ‘weekend warrior’ on a sports bike may favour a full set of racing leathers with body armour, boots, full-face helmet and Kevlar reinforced gloves. The touring rider may wear a leather jacket, boots, gloves, jeans and helmet. The Harley-Davidson rider may team a leather jacket or bare-armed vest with jeans and open-face or cutaway helmet, often painted black. The commuter rider may combine cutaway boots or shoes, a non-leather jacket and full-face helmet with his/her work clothes.

Obviously, the degree of protection provided in an accident varies depending on the type of clothing worn. But the maxim all riders should follow is: *Dress for the crash, not for the ride.*

What is appropriate clothing?

Work done by Liz de Rome and the Motorcycle Council of NSW suggests that more than 90 per cent of Australian motorcycle riders wear jackets, 84 per cent boots and 88 per cent gloves – although the figure drops sharply to 43 per cent for motorcycle pants. So the vast majority of motorcyclists are conscious of the need for protective clothing.

Yet it is still possible to see people riding around on the road in shorts, T-shirts and thongs – even in the middle of winter! Pillion passengers – particularly females – also

tend to wear slip-on shoes without heels, which are totally unsuited to motorcycle use. Even a simple ‘drop’ in these circumstances could result in permanent damage to an ankle or heel. There is no justification for riders and passengers wearing clothing and footwear that is better suited to a BBQ than a Sunday morning ride.

The Motorcycle Council of NSW has done a commendable amount of work in improving rider awareness of the benefits of protective clothing. But not all jackets and boots provide equal levels of protection. Europe sets standards for motorcycle clothing but, as Liz de Rome of LdeR Consulting has pointed out, these standards are not applied in the local market.⁷

Europe and Australia have significant climatic differences. Wearing full leathers or even a fully armoured jacket and gloves on a 40° day is simply not practicable and may even be counterproductive as the motorcyclist is likely to focus more on his or her personal comfort than on the traffic and road conditions. However, there are alternative, such as jeans with Kevlar inserts that while not offering the same degree of protection as leather are well ahead of standard jeans.

The only standards currently applying to motorcycle protective clothing in Australia are AS1609-1981 – Eye Protection and AS1698 Protective helmets for motor vehicle users. Helmets certified by one of four bodies – SAI-Global, BSI Benchmark, TUV Rheinland and Global-Mark - are accredited with meeting the standard. However, to meet AS1698 a helmet does not have to be full-face or even be a proper open-face helmet with ear protection, even though the RTA, in a brochure prepared in conjunction with the NRMA, recommends full-face helmets as 60 per cent of helmeted motorcyclist injuries are to the face.⁸ That same brochure also recommends choosing a light-coloured helmet, and wearing gloves and footwear that fully encloses the toes and heel.

⁷ Staysafe Committee, Issues in motorcycle safety, September 2005.

⁸ NRMA/RTA brochure, Safer Motorcycle Helmets, March 2010.

Regardless of what type of helmet they are wearing, riders should not be allowed to wear sunglasses rather than approved goggles or visors on a bike. Sunglasses may look cool but simply don't keep the bugs and dust out at speed. A speck of dirt in the wrong place can temporarily blind a rider in one eye and will almost certainly cause him or her to lose concentration.

Personal experience

On March 28 2009 I came off my bike on Wiseman's Ferry Road, Maroota at around 80km/h. The accident was as unexpected as it was devastating. One second I was upright and the next I was speared into the tarmac. The crash resulted in nine broken ribs, a shattered collarbone, a punctured lung, and severe injuries to my left knee and internal bleeding. But it could have been worse. My protective clothing - an R-Jays leather jacket with body armour; calf-length boots, Kevlar reinforced gloves, jeans and a Shoei full-face helmet - saved me from even more serious injury and, potentially, death.

The jacket and its body armour bore much of the brunt of my impact with the bitumen. I then slid 66 metres along the road, rolling over and over for much of the way, although I wasn't conscious of doing so at the time (in fact, I thought I had slid about six metres). My jacket was worn through at both elbows, causing deep grazing of both elbows. It wasn't a tight fit - I've lost some weight in recent years - and as a result I believe it slewed round on my body, rendering the body armour less effective than it should have been. My gloves were torn and while my hands weren't cut, I injured my right hand, tearing ligaments in it and reducing its grip strength to half that of my left hand - something that wasn't picked up until three months after the accident. The jeans had no padding and as a result I tore a huge hole in my knee that has required two operations. The toe of my left boot was almost ripped off but my feet were unscathed.

According to the Nepean Hospital emergency department doctor who supervised my initial treatment, the helmet I was wearing that day saved my face from being

‘degloved’. It is scratched and scraped all over – most notably on the visor and chin guard. Without that helmet, my face would have been dragged along the road. The doctor’s assessment: I would not have survived.

It would probably be instructive for the committee to look at some footage of motorcycle racing crashes. They would see that the riders – rather than simply sliding along the ground – very often tumble in the same way that I did and rely on their helmets and body armour to protect them.

Ninety-five per cent of the time I wear padded leather pants when I ride, but because March 28 was a hot day I chose jeans and paid the price.

The importance of wearing appropriate protective clothing that fits properly when riding a motorcycle cannot be over-emphasized.

I have been riding motorcycles for more than 40 years. I commuted to University and work for more than 10 years by motorbike. I rode to Perth and back, in the days when there was more than 500km of dirt on the Nullarbor. In the early 1970s I did some production racing. The last time I came off a motorcycle was in 1972. I would describe myself as a safe, experienced and cautious rider – yet on that fateful day, I locked up my front wheel on an almost straight stretch of road and ‘high sided’. It was so sudden I am still not entirely clear what happened. The moral of this accident is: no matter how safe or experienced a rider you are, you can have a prang when you least expect it. And when it does happen (as it inevitably will), the only protection you have is the gear you wear.

Open-face helmets are pleasant on hot days but they do not provide protection for the nose and lower face and unless they are fitted with a full visor are unpleasant in the rain.

Loose-fitting jackets will tend to slew round on the rider's body in an accident so that the body armour is not protecting the most vulnerable parts of the body. This is not something that can be dealt with through legislation, but it certainly should be a message to be included in any educative programme, consistent with RTA messages about properly fitting helmets.

The other issue the committee should consider is that of Anti-Lock Braking Systems (ABS). The Commonwealth Government has mandated that ABS, or its derivative, Electronic Stability Control, should be fitted to all new car models from November 1 2011 and all new cars from November 1 2013. No such requirement is under consideration for motorcycles and indeed many motorcyclists would reject such provisions, claiming they get more feel and control over their machines with standard braking systems. Certainly, I have tested braking distances on a car fitted with ABS at an advanced driving school and found I stopped sooner when I pumped the brakes before ABS came on than when ABS engaged. However, in my accident ABS (which was available on a more expensive version of the motorcycle I was riding) would have prevented my front wheel from locking up and the crash would not have occurred.

Safety Programmes

Many riders and people with an interest in motorcyclist safety contacted me after my accident. I was disturbed to learn that, despite the vulnerability of motorcycle riders and the high probability of riders and passengers being injured in even a low-speed crash, the State Government is spending very little on safety programmes for motorcyclists. In 2002-04 the RTA developed an action plan for motorcyclist and bicyclist safety that had some success, although Staysafe itself observed it was unclear why motorcyclists and bicyclists were included in a common action plan⁹. Much of the work on motorcyclist safety has been left to the private sector and local government to carry out. Examples included the 2002-05 Motorcycle Council of NSW strategic plan, *Positioned for Safety*; and the 2002 *Survive the Ride* project originated by Canada Bay, Auburn, Parramatta and Blacktown councils, which attracted limited

support from the RTA. The latter has morphed into the Survive the Ride Association with all funding provided by the motorcycle industry.

While the British government has a national strategy for motorcycling, the NSW Government does not appear keen to integrate motorcyclists into the overall transport mix.

Given the level of congestion in Sydney, this seems remarkably shortsighted. Motorcycles offer significant benefits as a means of transport (environmental as well as practical) and should be given equal status with other vehicles. The corollary of this is, of course, that an appropriate road safety programme for motorcyclists should be developed.

The head in the sand approach – that motorcycles are ‘too dangerous to be encouraged’ – has a long history in this State. In the 1950s the Cahill Government dramatically increased Third Party insurance costs on over 250cc bikes to discourage motorcycling. The Keneally Government’s target this year has been smaller capacity bikes with the CTP cost for bikes under 250cc rising by more than 80 per cent from July 1.

This increase might be justified if the money were being ploughed back into safety programmes and improved rider training – but it isn’t. There must a co-ordinated approach to motorcycle safety that starts from the top.

Even if the Government does not wish to follow the lead of London it must recognise that motorcycles are here to stay. Congestion and increased petrol prices will inevitably lead to an increasing number of bikes on our roads, irrespective of the older ‘pleasure seekers’ who take to the highways and byways each weekend, and it is in everyone’s best interests to minimise the accident, injury and fatality rate of motorcycle riders and pillion passengers.

⁹ *Op cit*, p.16.

On a positive note I believe the current rider licensing system – onerous as it may seem for participants – is excellent and in itself has contributed substantially to the fall in motorcycle fatalities since the mid-1980s. The headlight on in daytime ADR has also contributed by making motorcycles more visible.

What should the Government do?

Outlined below are some positive initiatives the Government can implement to reduce the accident and casualty rate amongst motorcyclists.

1. Recognise that motorcycles are an integral part of the traffic mix.

The RTA must realise, as the British Government has done, that motorcycles have a place on NSW roads and can help to reduce traffic congestion and air pollution. Once this happens it is far more likely that funds will be allocated to motorcycle safety programmes.

2. Develop and fund an ongoing action plan for motorcyclists.

The fact that Survive the Ride is still going without State Government support is a tribute to its executive members, Stephan Henderson and David Tynan. It would clearly be much bigger and better and reach a far wider audience if it (or a programme like it) received Government funding. This funding should be ongoing and should focus on motorcycle specific issues, such as clothing (see below), wet weather riding and the exposed nature of motorcyclists.

Motorcycle safety campaigns should not be lumped in with bicycle safety campaigns. The issues affecting bicyclists and motorcyclists are entirely different. Bicycles should be set apart from other traffic wherever possible on their own cycleways while motorcycles must fit in with existing traffic flows. Bicycle helmets and clothing are totally inappropriate for motorcyclists and vice versa. I've yet to see a Mongoose rider pedalling furiously up a hill in racing leathers and full-face helmet! And I've never seen a pushbike rider reach 100km/h, even downhill with a following wind.

3. Test helmets for side impact absorption and face protection

Current testing of helmets in this State involves checking strap strength and energy absorption and resistance to penetration on top of the helmet. The sides and chin guard (where fitted) are not considered – so cutaway helmets, favoured by cruiser riders, pass the test, even though they offer no protection for the ears or the side of the face. Given that the helmet is the single most important item of safety equipment a motorcyclist can wear (and the only one mandated by law), it is too important to be overridden by the vagaries of fashion.

There were plenty of objections when helmet wearing became compulsory in this State in the 1970s, yet that single law change has saved hundreds of lives and no one would seriously argue against it today. Some people suggest full-face helmets are implicated in spinal injuries, an argument that was first advanced soon after Bell introduced the first full-face helmet in 1966, but it has never been proven. What is unarguable is that full-face helmets provide the maximum protection for the face, ears and jaw. The only helmets awarded five stars for protection from injury in a crash in the recent joint project between the RTA and the NRMA were full-face helmets. When you come off a motorbike everything happens too quickly for you to use your arms to deflect the force of the impact, or to twist out of the way of a fast-approaching object. You rely solely on your protective clothing and equipment to mitigate injury. The helmet may protect the rider from brain damage (as it should) but it should also protect the face and ears from injury. I strongly support changing the Australian standard so it takes into account side impact absorption and face protection in addition to the current testing regime.

4. Make it compulsory to wear long trousers and shoes with heels.

Incredible but true: some people wear shorts and thongs on motorbikes. That's despite the fact that your legs are certain to scrape on the road in the event of a crash and can be trapped beneath the bike, including under the exhaust pipe. Moreover, open thongs and sandals do not afford proper operation of the motorcycle's gearshift and rear brake levers. All motorcyclists and pillion passengers should have to wear long

trousers and shoes with heels. This rule would be easy to enforce as the offence can be visually detected by a police officer.

5. Encourage the wearing of high-visibility clothing.

Motorcyclists need to be seen. Brightly coloured jackets and helmets or even reflective patches are a great adjunct to lights on in daylight and will be picked out in the headlights of other vehicles at night. They are particularly useful in wet weather. Helmets should be painted in a light colour or colours, not sprayed black. This issue should be the subject of an ongoing promotional campaign.

6. Encourage the wearing of reinforced jackets and trousers and boots.

The best protection of all is given by a set of one-piece leathers and boots with Kevlar reinforced gloves and a full-face helmet – however, this sort of clothing is expensive and not always practicable and therefore cannot be mandated. It would be patently absurd for a scooter rider to be decked out in racing leathers for the trip into work. Equally, full leathers are unlikely to be chosen by a touring rider for a trip to Adelaide, or by just about any motorcyclist on a hot January day. But there are alternatives, such as reinforced jeans and ankle boots that afford excellent protection but are more suitable for summer and for wearing at the end of the ride.

The Government should support a media campaign promoting the wearing of high-visibility, high-strength protective clothing. It should also work with the other States and the Commonwealth to develop Australian equivalents of the European standards for motorcyclist clothing.

Conclusion

Taken as a whole these measures will help to reduce the injury and fatality rate among motorcycle riders in NSW. Improved rider visibility coupled with reinforcing messages such as “Watch for motorcycles” will cut the number of collisions between cars and motorbikes, while better helmet and clothing standards will moderate the severity of injury when accidents occur.