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The Secretary

Economy and Infrastructure Committee

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Inquiry into the Increase in Victoria's Road Toll

Victorian Motorcycle Council Submission
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About this submission:

The Victorian Motorcycle Council welcomes the opportunity to present a submission to the Economy and Infrastructure Committee Inquiry into the Increase in Victoria's Road Toll. The submission is in two parts – “Part A” being key motorcycle safety related discussion points as they broadly relate to the topic of the inquiry and “Part B”, specific responses to the terms of reference.

The Victorian Motorcycle Council (VMC) was created to represent the interests of all motorcyclists, motorcycling organisations and relevant stakeholders in Victoria. The Victorian Motorcycle Council is represented on the Australian Motorcycle Council, the peak motorcycle body in Australia.

This submission has been formulated from the point of view of motorcycling and takes into account the extensive knowledge and thinking of a diverse group of experienced, representative, passionate and engaged motorcyclists. The topic of motorcycle injury and fatality is a common topic in motorcycling circles, the rider road toll particularly so. This submission distils some of the more relevant aspects of those considerations for the inquiry, both in answer to the terms of reference and in a more general “reveal” of rider thinking.

The information included in this submission is for all intents and purposes, factual, correct, accurate and relevant. The VMC, and/or its associates, are available to expand on any of the points contained within this submission, or available to consult further on related matters not covered in this submission.

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-=PART A=-

Motorcycle road safety is complex

Motorcycles / Powered Two Wheelers are more complex than they seem. The subtle and significant design differences, purposes they serve and the many “tribes” of riders that ride them, complicate matters even before considering their unique motorised single track, highly manoeuvrable dynamic characteristics. This complexity is increased even further given that primary motorcycle safety is sensitive to patterns of use, skill level, road design, road condition and state of repair, traffic, weather, bike condition and rider inputs. Therefore, the possible factors influencing motorcycle road safety statistics are complex. This makes powered two wheelers a “somewhat” unique road user group on multiple levels.

To that end, the Economic and Infrastructure Committee (E&IC) is recommended to review the findings of the 2011/12 Parliamentary Road Safety Committee Inquiry into Motorcycle Safety¹, which in the view of the VMC, did a superlative job in navigating the many levels, layers and aspects of motorcycle road safety. Whilst it did not specifically analyse the influence of each factor on road safety statistics, the Infrastructure Committee will be able to appreciate the complexity and infer what factors have a stronger or lesser influence on the rider road toll.

Motorcycles: A Dynamic Part of a Live Complex System

In simple terms, motorcycling is a dynamic part of a live complex system, subject to many unique variables whose individual influences vary from rider to rider, day to day, location to location and season to season. This accounts for the variability in rider road toll figures particularly when it is appreciated that significantly different results have occurred under the same road safety paradigm and programs, i.e., the lowest ever rider tolls in 2014 and 2015, as well as the recent highest rider toll in almost 20 years in 2016. Refer figure 1 below. A traditional road safety approach of finding a "cause" for such results may be a fruitless task at this present time. It's likely that there are multiple causal factors at play, but also, the interaction between the many variables may at times create different forcing pressures on the system. Any hope of an answer would appear to lie in better data.

The better data theme is expanded in more detail below, but it seems clear that we need something more than what data is available today. Whilst the VMC is aware that there is a significant volume of data available, it appears that it is not *on point* in the area of motorcycle road safety. Serious injury crashes are rarely analysed and fatality crashes tend not to be impartially reconstructed and analysed to find genuine root causes. As a result, those charged with managing road safety in Victoria will not be using unbiased or

¹ <https://www.parliament.vic.gov.au/293-rsc/inquiry-into-motorcycle-safety>

on point data. The primary data sources are VicPol crash reports and “paid for” research, each which exhibits bias in subtle and overt ways.

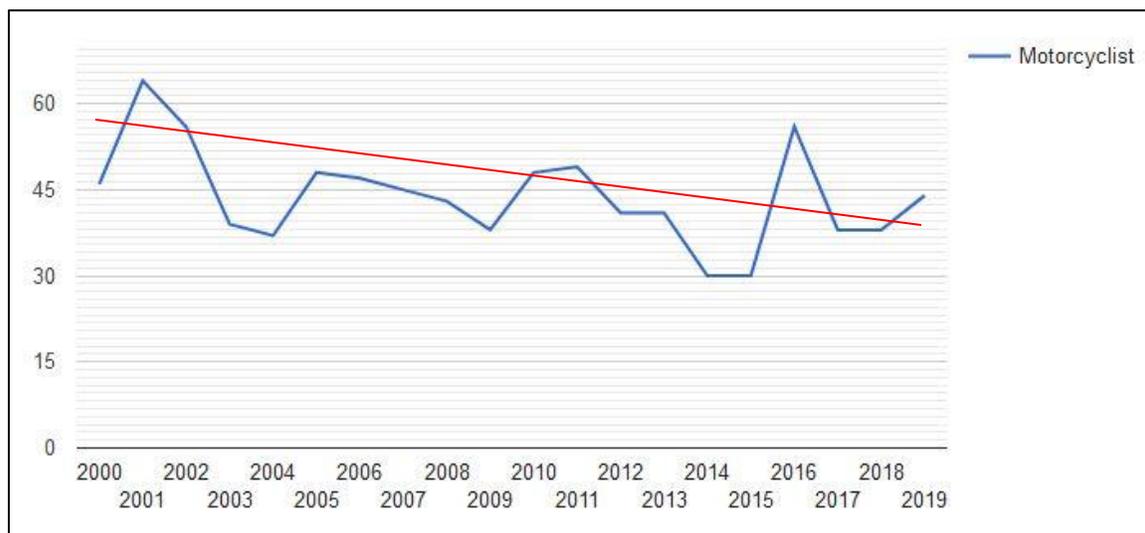


Figure 1 TAC figures, Victorian Annual Motorcycle Rider Fatality Toll 2000 - 2019

Relevant Metrics Are Important.

Given the statistical variability and the relatively low base numbers, authorities need to be cognisant that small changes in numbers will look dramatic and potentially alarming. Constant focus on year to date versus year to date, and year versus year results magnifies this alarm and creates fodder for a negative media. A longer term trend view is essential to avoid knee jerk reactions.

One immediate approach to provide both a more meaningful comparison and less emotive discussion in the public space is to use rolling 12month comparisons. The data is provided by TAC. Such figures could also be used in comparison to the rolling five year average data to further provide context to figures.

The increase in fatality count since 2014's record low figure has resulted in a media impression that motorcycling has never been more dangerous, however this is not supported by the bigger picture view. Figure 1 depicts an underlying declining trend over the nearly 20year timeframe.

When the fatality *count* is converted to a fatality *rate*, the declining trend becomes very clear. Victorian Motorcycle registrations have increased by approximately 220%² in the timeframe depicted in figure 1 (nearly 300% since rider fatality stats began). That means that the fatality rate has more than halved on a “per registered bike” basis. The

² <https://www.abs.gov.au/AUSSTATS/abs@.nsf/ViewContent?readform&view=productsbyCatalogue&Action=Expand&Num=12.3>

VMC argues that fatality rate is a more accurate metric of motorcycle road toll statistical performance.

Another commonly used and apparently self-evident measure of motorcycle safety is the *percentage of the total* road toll made up by motorcyclists. It is a ubiquitous figure used in the media, by road safety agencies (see figure 2 below³), and stated in opening paragraphs of most motorcycle road safety research. It is poor road safety metric that actually says nothing of interpretative value particularly when used as a simplistic comparison from year to year.

Motorbike riders and passengers represent 15% of deaths and serious injuries despite only accounting for 4% of registered vehicles. And with the ever-increasing popularity of motorcycles and scooters, we need to ensure riders are kept safe on the road.

Figure 2 - Excerpt from Towards Zero Strategy page for Motorcyclists, use of % figure.

Its use should be dropped, self-evidently so when the following is considered.

- An increase in the percentage would suggest a *reduction* in rider road safety, however, the rider road toll reducing at a lesser magnitude than the corresponding reduction in the overall road toll, would result in an increase in the percentage figure. The improvement in rider raw figures would be occluded by this mathematical artefact.
- Similarly, a percentage reduction would suggest an *improvement* in rider road safety, however the rider road toll increasing by a smaller proportion than a corresponding increase in the overall road toll would produce a lower percentage.

In the examples above, has the road safety picture been served by the use of this figure? Would it surprise the committee to know that both the RACV and VicPol fell foul of misinterpreting the percentage figure in their evidence to the previously mentioned motorcycle road safety inquiry? The use of rider percentage of the total road toll should be dropped.

Timely Relevant Data is Essential.

All that said, reductions in absolute numbers and downward trends are desirable. In order to do this, good timely data is required from which the road safety agencies can understand the root causes of crashes, and so in turn, form policy advice and implement road safety programs. In the view of the VMC however, the current arrangements make this very difficult if not unlikely.

From previous inquiries, we know that the primary source of crash data is from Police crash reports. These reports are known to be biased towards apportioning blame

³ <https://www.towardszero.vic.gov.au/safe-people/road-users/motorcyclists>

for legal purposes. Further, in the majority of motorcycle fatality crashes, the crash report is compiled by the Officer on the scene, by filling out a pro-forma crash report as well as they can. Given that the officer is unlikely to have had the necessary scientific and specific motorcycle crash reconstruction training, the accuracy of identified crash causes is questionable.

More accurate root cause data is likely if the Major Collisions Investigation Unit investigates a crash, however, they too most likely exhibit a similar "apportioning blame" bias as a result of the data being destined for use by Law and Coroners courts.

In the current arrangement, while the Coroner must sign off on every road fatality, the report is not publicly available and cannot serve as intel for understanding fatality trends. A public Coroner's inquest has the most likely chance of arriving at genuine root causes, but these happen infrequently and when they do, they happen well after the event.

In addition to the above, the likes of MUARC⁴ are contracted from time to time to conduct in depth crash studies, or analyse crash statistics to identify emerging trends and propose possible countermeasures, but these are not timely and at times, riders have certainly questioned their relevance. Anecdotally, MUARC is seen in many riding circles as having an anti-motorcycling bias. MUARC's impartiality is definitely in question.

The answer then would seem to be an independent "Office of Road Safety and Road Safety Data" that conducts timely crash investigations and shares depoliticised unbiased and impartial road safety data. This would go a long way to providing relevant data for all stakeholders. If it were to be sufficiently resourced, it would go a long way to making such data timely, and timely and accurate data means road safety agencies staying on top of genuine emerging trends.

A likely benefit of such data being made more readily available would be a motorcycle community safety dividend. It is the VMC's opinion that a significant proportion of the rider fatality rate reduction experienced in Victoria, has come from riders discussing and sharing the learnings available from well understood crashes. This can be seen in social gathering, club meetings, social media pages and internet chat forums where more experienced riders share the benefit of their experience and insights to lesser experienced riders especially when using a common or significant crash as the example. Lesser experienced riders take these insights out with them on the road.

Real World Messages More Likely To Have An Impact

It is often stated in road safety circles, that road safety is a matter of road user motivation. To that end, we see public campaigns and messaging that try to inspire and influence improved road safety performance. When these messages have been specifically directed at riders, the rider engagement (despite what TAC surveys might indicate) has been understandably rather poor. "Finger wagging" messaging and

⁴ Monash University Accident Research Centre

messaging consistent with political policy rather than the riding task, tend to fall on deaf ears. There's also the reality that narrowly focussed messages may only engage a small portion of the riding demographic.

In recent times, the TAC and VicRoads have improved their motorcycle messaging largely as a result of better engagement with stakeholders and until being disbanded in late 2019, through greater use of the Ministerial Motorcycle Expert Advisory Panel. However, messaging largely revolved around slowing down, wearing more gear and buying a motorcycle with more safety technology. Putting it plainly, such car-centric approaches are not a path to significantly reducing the motorcycle road toll.

The reality is and riders intrinsically understand that riding a little slower, wearing more gear and riding a bike brimming with tech aren't genuinely lifesaving strategies. Such strategies have very little influence over the frequency of initiating incidents and only a minor to some influence over the consequences flowing from such incidents – as a result, these messages are therefore more easily dismissed. Refer to appendix 1 for a more detailed discussion about this.

The environment in which a motorcycle operates has a significant influence on a bike's safety and so there are significant safety dividends to be won there, but even in the most ideal environment it still remains true that a *motorcycle is almost entirely reliant on rider inputs to make safe progress*. Public road safety messaging campaigns that fail to acknowledge this reality are unlikely to generate any behavioural changes or win significant road safety dividends. Even when it could be argued that the late 90's TAC "Reconstruction" and "Reduce the risks" campaigns pointedly targeted the rider, they used unrealistic, fantastical and over dramatised images at odds with a rider's everyday riding reality. Disenfranchisement and disengagement were the primary results.

The more recent "Perfect Ride" TAC campaigns generated almost universal acceptance from riders. It reminded riders to look out for each other and ride in a manner that allowed for common road user and rider errors. This kind of realistic and relatable approach needs to be pursued further if the motivation of road users is a key plank to winning improvements in road safety.

The Three Pronged Approach to Rider Fatality Reduction

Putting all the above together, the VMC posits that to win long term and lasting reductions in rider fatality numbers, the following three things need to occur: better (and more skilled) riders, on better (motorcycle friendly) roads being shared with more aware road users.

-=PART B=-

Specific Response to Each Term of Reference

(1) Current Victorian Towards Zero Road Safety Strategy 2016-2020 and progress towards its aim of a 20 per cent reduction in fatalities with 200 or less lives lost annually by 2020;

We are unsatisfied with the way motorcycles have been included in the current Victorian Towards Zero Road Safety Strategy. The current strategy, as it relates to motorcyclists, seems to only be concerned with:

- Motorcycle “friendly” barriers,
- The promotion of ABS braking,
- Mandatory learner training through the Graduated Licensing System (GLS) (we will address training in point 7), and
- The promotion of the use of protective clothing.

For the vast majority of riders (current learners possibly excluded), there is virtually nothing in the strategy to reduce the *frequency* of, or the number of crashes riders are having. The strategy seems overly focussed on injury mitigation, a goal the VMC supports, but such countermeasures only come into play **after** an incident has occurred.

While no barrier is truly rider “friendly” and it is never good for a vulnerable road user to hit any barrier, barriers and protective clothing come into play **after** a rider has lost control. Motorcycle ABS can similarly be considered an after event countermeasure, as it typically comes into play **at the end** of a causal chain of events in the hopes of avoiding the motorcycle capsizing.

Our position on barriers is that all barriers should be “motorcycle friendly” and should cause less injury to a motorcyclist in a crash than if the barrier were not present – an objective arguably at odds with the vast roll out of wire rope barriers. ABS is already mandatory for new motorcycles and has already been discussed. We believe better and more competent learners should inherently crash less but VicRoads has not undertaken their promised study on the post improvement (circa 2014) Motorcycle GLS system to determine whether this is the case. We support the promotion of protective clothing and are strong advocates of the MOTOCAP safety ratings. (<https://www.motocap.com.au/>).

We believe that approaches which target improving the competency of all riders, that target more motorcycle friendly environments and that raise the awareness of motorcycles/motorcyclists in the non-riding road user community, will win significant reductions in the rider road toll over the longer term.

(2) Adequacy and scope of the current driver drug and alcohol testing regime;

We have no comments on the current drug and alcohol testing regime.

(3) Adequacy of current speed enforcement measures and speed management policies;

We have little comment on current speed enforcement measures and speed management policies, except as discussed in Appendix 1 in relation to minimal impact on injury consequence. However, we do believe the regular presence of police Solo motorcycles in popular riding areas has an effect on reducing speed offences by all road users (motorcyclists included) and improving road user behaviour and vigilance. The police Solo squad resource may not be as effective a road safety resource as they could be due to often being re-tasked in event management rather than road safety duties.

(4) Adequacy of current response to smart phone use, including the use of technology to reduce the impact of smart phone use on driver distraction;

We regard the current enforcement strategy towards smart phone use as having “room for improvement”. Urban motorcyclists regularly encounter drivers on their phones and riders perceive distracted drivers to be major hazards. Increased penalties may act as a deterrent however we believe that improved probability of detection will be more effective. With a wary eye to civil liberties and privacy concerns, we cautiously support the use of technology to reduce the impact of smart phone use on road user distraction.

(5) Measures to improve the affordability of newer vehicles incorporating driver assist technologies;

Increased use of technology that reduces the impact of driver error and poor driver competence will win road safety improvements in general and may be a pathway to helping keep riders safer on shared roads. Blind spot monitoring and forward obstacle detection and avoidance are particularly relevant to us. We have some reservations however as there are reports that in some cases motorcycles may not be detected by the sensors associated with driver assist technologies. In such cases, driver dependence on the technology could be dangerous to motorcyclists. The cost of such technology is clearly an important influencing factor.

It may not be appreciated by non-riders but such technologies are still largely at odds with motorcycling so cannot be a path to be relied on. This was borne out by the European “SafeRider” project and more recently by the Israeli start up “Ride Vision” which promised a *Collision Avoidance Technology System* that remains unreleased and is understood to be unproven. That said, we’re aware that BMW motorcycles and Bosch are continuing development on such rider assistance technologies.

Once the technology is proven and riding compatible Heads-Up-Displays for motorcycles become more readily available and cheaper, they may be more attractive to riders. On balance we support improving the affordability of driver assist technologies but adopt a wait and see approach to rider assist technologies.

(6) Adequacy of current road standards and the road asset maintenance regime;

Motorcycle stability and dynamics are very sensitive to road surface condition and design – as was shown by the recent Coroners investigation into a double fatality on the Great Alpine Way⁵. Popular riding roads are typically regional roads, often with low traffic volumes, which are therefore not always adequately designed, prioritised or maintained. Current road standards seem broadly adequate if the roads are well maintained, but could be significantly improved if the VicRoads “Making Roads Motorcycle Friendly Guide” was more widely implemented.

Anecdotally, riders report that many country and regional roads are littered with potholes, gravel patches and poorly maintained road surfaces, all of which are hazardous to motorcyclists. The common spray seal method of repairing roads often leaves dangerous amounts of gravel on the road which directly impacts motorcycle stability. Such areas are not always adequately sign posted so riders come upon them without sufficient warning. There is clearly room for improvement in road asset maintenance strategies and resources at present.

(7) Adequacy of driver training programs and related funding structures such as the L2P program;

Newly licensed riders in Victoria have completed the newly revised and improved motorcycle GLS. This system has not yet been evaluated but the anecdotal feedback is that it is successful in preparing riders for road riding. An expressed reservation about the GLS is that the cost of obtaining a motorcycle license has increased to upwards of a \$1000. It is feared that this may directionally increase the likelihood of unlicensed riding.

Arguably, riders licensed under the previous approach would benefit from experiencing or being exposed to the revised program. Some kind of overt encouragement for riders to update their skills would therefore be beneficial and the existing rider training infrastructure would be available to take advantage of such programs.

We regard post licence / advanced motorcycle rider training programs in Victoria as grossly inadequate. We are strong and passionate advocates for a program along the lines of the subsidised New Zealand Ride Forever program⁶ that has had a demonstrated effect of reducing crash incidence and accident injury claims by

⁵ <https://motorbikewriter.com/coroner-finds-bump-caused-deaths/>

⁶ <https://www.rideforever.co.nz/>

its participants. Once again we re-iterate that one of the key ways to make motorcycling safer is to make the rider a more skilful and safer rider. Clearly the NZ Government agrees.

(8) Adequacy and accuracy of road collision data collection;

Whilst road collision data is available through VicRoads Interactive Crashstats⁷, this is not a user-friendly process and as discussed earlier in this submission, nor is the data potentially entirely relevant, unbiased and timely. The 2011 Victorian Parliamentary Inquiry into Motorcycle Safety recommended: - *“That an independent office of road safety data be created, which will be for collecting, collating, interpreting and publishing all data relevant to road safety, and, for the purposes of this Inquiry, specifically motorcycle safety.”* The road safety agencies supported this recommendation in principle, however elected to retain responsibility over such data. We believe that the establishment of an independent office of road safety data is crucial to road safety policy in Victoria and further, suggest that it also be responsible for fatal and serious motor vehicle crash investigation.

Closing Comments

The Swedish Motorcyclists Association recently stated *“...it is obvious that the safety culture that we have created among Swedish riders through information, advanced training and advocacy together with other stake holders in the motorcycle community have been crucial for safety.”*⁸ We believe that the development of a similar safety culture in Victoria will be crucial in reducing the number of motorcycle fatalities and injuries.

The Victorian Motorcycle Council believes that the way forward is through new motorcycle safety policies and programs developed in conjunction with motorcycle riders / stakeholders, that are informed by relevant, unbiased and timely data. The programs and policies should be focussed on improving rider skillsets and strategies in order to become better and safer riders, improve the road environment that motorcycles use to maximise traction and stability and minimise hazards, and that helps other road users become more aware of motorcycles and their riders so that motorcycles are seen and are properly accounted for in driver decisions.



⁷ <https://www.vicroads.vic.gov.au/safety-and-road-rules/safety-statistics/crash-statistics>

⁸ <http://www.fema-online.eu/website/index.php/2019/10/08/swedish-motorcyclists-ask-for-enforcement/>

APPENDIX I

Car-centric Ideas Are No Pathway to Motorcycle Safety.

Motor vehicle occupants have experienced improved safety outcomes through reducing speed limits, improved car designs that increase the impact survival speed and roadways that are more accommodating of driver error. This fits in with the SAFE system approach. In addition, motor vehicles have included an ever increasing array of driver assistance technologies that make allowances for driver error and competency shortfalls. It's no wonder then that safetycrats have tried to leverage the same approach with motorcycles, but the results have not met expectations.

Fundamentally, these approaches are inconsistent with the unique characteristics of motorcycles and ignore three fundamental riding realities:

- 1) That a motorcycle remains almost entirely reliant on its rider for making safe progress.
- 2) That a motorcycle and its rider are sensitive to their environment, i.e., road condition, road design and layout, traffic volumes, traffic density and demographic, weather and other road user awareness, and
- 3) These strategies do not reduce the probability of an initiating incident.

In riding circles, it is often stated that the first rule of riding is "Don't crash". Any strategy that hopes to win significant and lasting reductions in motorcycle fatality numbers has to do fundamental work to reduce the probability of a rider crashing. The current Towards Zero approach for motorcycling is almost entirely focussed on mitigating the consequences of a crash, NOT reducing its probability.

While a car and road system can be designed to allow a vehicle to "crash safely", this cannot apply to a motorcycle as a result of the rider being an exposed vulnerable road user. Once the dynamic energies of a motorcycle crash are unleashed, physics and chance drive the outcome, with a dire outcome possible even in low speed crashes. A car-centric approach is therefore NOT the answer.

Let's further explore this apparent car-centricity in the main approaches outlined for improving motorcycle safety contained in Victoria's Towards Zero strategy⁹.

Wear more protection. Helmets are mandatory. Motorcycle protective gear is discretionary. In the latter case, it exists to attempt to mitigate the consequences of a crash. Unlike SRS airbags, seat belts, crumple zones and other typical protective motor vehicle features, gear has a very limited capacity to mitigate impact energies and can only do so at locations fitted with armour. In all other locations, it is effectively 1 - 1.5 mm of leather or textile, designed to resist abrasion. (While it is true that air bag vests have entered the market, they are exorbitantly expensive, so have very little uptake and may also have other unintended road safety consequences.)

⁹ <https://www.towardszero.vic.gov.au/safe-people/road-users/motorcyclists>

In other words, good gear¹⁰ (and that is a whole topic in its own right) is good at mitigating low speed low impact energy crashes into inconveniences and minimising skin abrasion and "road rash" injuries in serious crashes. The latter alone is an excellent reason to wear gear as complications and infections from skin damage extends hospital stays and recovery times.

Wearing gear makes sense, but it does not impact the probability of a crash (except in climatic extremes if inappropriate for the conditions) and it is not life-saving unless it avoids an injury where the rider might have otherwise bled out. To demonstrate this, a rider wearing head to toe gear is just as likely to die in a 60km/h crash¹¹ as the rider in shorts and a singlet. While this seems unintuitive it is however true. A 60km/h impact is the same as falling from a four storey height. It should be obvious that both individuals would suffer the same fate following such a fall.

Wearing more gear more often will not fundamentally reduce the incidence of rider fatality in a serious crash, nor will it reduce the probability of a motorcycle crashing. As an approach then, while it has injury mitigating benefits, it is inconsistent with primary safety.

Being more visible: It is a common view that because motorcycles are difficult to see they should make themselves more visible and therefore they'd be easier to see. This is completely false. Whilst that goes counter to modern day work place Hi Viz safety culture it is none the less true. Nothing about visibility can address the cognitive reasons that drivers fail to see motorcycles. Being more visible has no provable benefit for rider safety nor does it lower the probability of a rider being involved in a crash. It is nothing more than a non-evidence based intuitive notion entering the road safety policy space without being questioned. This is covered in some detail in another VMC submission and its two key references. The reader is directed to those resources on this topic:

- www.victorianmotorcyclecouncil.org.au/content.cfm?page_id=891085¤t_category_code=17718 (VMC Submission)
- Reference 1: www.scienceofbeingseen.wordpress.com (Science of being seen, explaining "looked but failed to see" collisions)
- Reference 2: www.youtube.com/watch?v=x94PGgYKHQ0 (Invisibility Training for Motorcyclists).

Slowing down. While slowing cars down tends to improve occupancy survival, a rider is always an exposed vulnerable road user so remains prone to injury (or worse) at all typical suburban and highway speeds¹². Therefore the consequences remain largely the same even if riding at the speed limit or even a little slower. As a result, riders intuitively ignore such messages.

¹⁰ https://www.infrastructure.gov.au/roads/safety/publications/2009/good_gear_guide.aspx

¹¹ Risk of death versus impact speed research for vulnerable roadusers, as presented on such pages as:

<https://www.police.wa.gov.au/Traffic/Cameras/Speed/Consequences-of-speed>, indicate certain risk of death above 60km/h.

¹² Risk of death versus impact speed research for vulnerable roadusers, as presented on such pages as:

<https://www.police.wa.gov.au/Traffic/Cameras/Speed/Consequences-of-speed>, indicate certain risk of death above 60km/h.

This is not making a case for excessive speeding, however the impact of wiping off 5km/h is somewhat insignificant in terms of improved reaction time or injury consequence. Such a strategy therefore is unlikely reduce the probability of a crash or reduce fatality figures due to the energies involved. Slowing down is therefore not a pathway to improved primary safety.

In fact, slowing down may create a different hazard as a result of travelling more slowly than the surrounding traffic. Not only does it require other road users to manage the slower and more vulnerable motorcycle, it complicates the riding task as now the rider needs to direct their attention in all directions. Relying on other road users for one's primary safety is an anathema to good robust road craft.

Counterintuitively, many riders choose instead to travel at a speed *slightly above* the prevailing traffic speed. This allows the rider to bring almost their full attention to the path ahead of them, which due to their slight speed differential, is the primary direction from which the hazards they need to observe and manage are coming from. This is a recognised safer way of riding in traffic which clearly flies in the face of the current road safety paradigm.

All that said, there is a time and place for genuinely slowing down on a motorcycle, and that is where unpredictable or sudden vehicle and other road user movements may occur, such as riding through a residential street, busy strip shopping precinct or busy car parks. Slowing down maximises survival space, allows shorter braking distances and is more accommodating of reaction times. In contrast to the more generic "slow down" messages, messaging that instead included "riding technology" as mentioned above, would almost certainly have greater engagement and a likely road safety dividend.

More technology = safer vehicles. Motor vehicles with more driver assistance technology are safer than cars that are without such features. Stability control and Anti-Lock Braking are two key technologies that have improved motor vehicle safety. These technologies can now be found on motorcycles and in fact, Anti-Lock Braking Systems (ABS) is now mandatory on all new motorcycles in the EU and in Australia.

The indications are however that motorcycle fatality rates and counts around the world are failing to respond and reduce to the ever increasing number of bikes with ABS and traction control. And the reason is simple; these two countermeasures do not rectify or eliminate any significant root causes of fatality crashes. That is not to say that they have no part to play in mitigating injury crashes, however, many ABS statistical studies¹³ tend to suffer from significant and serious flaws and confounds which render their conclusions of 30 - 80% fatality reduction (depending on the study) as nothing short of fantastical.

¹³ There is a lot of research indicating motorcycle ABS's potentially significant lifesaving benefits, however this research is almost always highly confounded and flawed. The data fails to account for intrinsic rider characteristics, rider demographics, type of riding and in Australia's case, MUARC report 327 Sept 2015, determined fantastical fleet wide conclusions on literally a handful of BMW motorcycles versus a wider non ABS bike control group without any indepth crash study or assessment. Not surprisingly, real world results demonstrate such flaws clearly. The promised fatality reductions of anywhere between 30 – 80% (depending on the research), have failed to materialise for a simple reason - wheel lock braking errors are not a significant fundamental root cause of rider fatality.

It's not difficult to appreciate why ABS is not the life saver it is touted to be, since by the time the rider has seen and responded to a hazard that requires hard braking, the causal chain is already in place. ABS typically engages at the end of a causal chain hoping to keep the bike from skidding and falling. With certain types of ABS systems in specific scenarios, the ABS may in fact exacerbate an incident. It is not the panacea it has been sold and marketed as. It also does not leave the motorcycle steerable, which is a car-centric ABS consideration. ABS has its place, but the real world reality is that braking and wheel lock errors, while featuring in many crashes, are simply not a significant cause of rider road fatality hence it is unlikely to provide any significant lifesaving benefit.

Traction control is another highly touted technology which stops the rear wheel spinning up under power. A wheel spin unchecked can lead to the rear kicking out sideways and the rider then being high-sided off the bike. High-sides are not a significant root cause of rider fatality, therefore the countermeasure has not led to significant reductions in rider fatality. High-sides are a cause of significant injury to a rider however, so it is likely providing a benefit in the injury space.

One counterintuitive outcome of traction control is aggressive throttle control out of corners and in the wet. Riders learn to let the electronics sort the wheel spin out and as a result, tend to ride faster in the rain (even more likely if the bike is fitted with ABS) and also exit faster from corners. Risk homeostasis or risk compensation is a downside of making vehicles "safer". In either of the two scenarios, is the rider genuinely safer?

What's the answer? From the above it is clear that the current road safety approach is unlikely to win significant and improved reductions in rider fatality numbers as they do not fundamentally reduce the probability of a crash. What is the answer then?

For most riders, the solution is obvious - better (skilled) riders, more accommodating road environments and more aware non-riding road users. Each of these is likely to reduce the probability of a motorcycle crash. These are however, not easy pathways to work towards, hence the focus on speed enforcement, gear wearing and reliance on technological solutions.

It's time for a change in the paradigm.

