

## **Quad Bike Safety in Tasmania – Issues Paper**

### Response from the Federal Chamber of Automotive Industries

The Federal Chamber of Automotive Industries (FCAI) is the peak body representing the automotive industry in Australia. The leading Australian distributors of All Terrain Vehicles (ATVs) which the FCAI represents are Honda Australia Motorcycle and Power Equipment Pty Ltd, Yamaha Motor Australia Pty Ltd, Suzuki Australia Pty Limited, Kawasaki Motors Pty Ltd, and Bombardier Australia Pty Ltd.

The safety of ATV riders is of paramount importance to the manufacturers and distributors of these vehicles in Australia. Currently there are well over one quarter of a million ATVs in use throughout Australia, and although they are one of the most useful vehicles on farms, there have been a number of deaths and serious injuries associated with these vehicles.

The ATV industry through the FCAI has been very active in terms of ATV safety undertakings; through research projects and studies, provision of safety resources, communication of safe practice, cooperation and partnerships with safety agencies and other organisations.

The ATV industry both in Australia and North America have been promoting safe use guidelines to owners based on the industry's 'known safety practices'. In Australia, the known safety practices are summarised in the ATV Industry's 5 Star ATV Safety Guide:

- ★ Select a vehicle that is fit for purpose and suited to the task.
- ★ Complete ATV training to fully understand the techniques and strategies for safe riding.
- ★ Always wear a helmet and protective gear; never ride when intoxicated or fatigued.
- ★ Never carry a passenger on a single seat ATV; or allow children (<16 years) to ride an adult sized ATV.
- ★ Follow the manufacturer's recommendations and heed the warnings.

The FCAI is encouraged that the Tasmanian Government has released this issues paper seeking stakeholder response, as the industry is keen to cooperate and improve safety outcomes for all ATV users.

### Developing a state-wide safety plan

The FCAI is interested to learn that Workplace Health and Safety Tasmania is establishing a taskforce to investigate ways of improving safety outcomes. Currently the FCAI is a member of the NSW Quad Bike Safety Industry Action Group; the QLD Quad Bike Industry Reference Group; and has provided expert advice to the Agriculture Industry Safety Group in West Australia. The experience, knowledge and support that FCAI personnel bring to these groups is critical to the group's directions and future success, and we would look forward to being involved with Tasmanian taskforce if requested to do so.

## **Increasing rider awareness of risks**

### **1. Raise public awareness of risks and highlight safe use practices.**

All but one of the public awareness key messages (“Consider fitting rollover protection”) outlined in the issues paper closely reflect the industry’s know safety practices as set out in the 5 Star ATV Safety Guide above. Based on the most reliable research available, the industry does not recommend fitment of rollover protection (ROPS) to ATVs (discussed below). Apart from this one difference, all of the other points are currently being communicated to ATV users and potential users by the ATV Industry electronically, at farm shows and through ATV dealerships throughout Australia.

The FCAI has been working with other state safety agencies to spread these key safety messages, and contacted WorkSafe Tasmania last year suggesting that jointly prepared safety messaging would achieve better outcomes in Tasmania. WorkSafe QLD for instance has partnered with the FCAI to use the ATV industry dealer network to improve communication of safety messages with ATV customers in that state.

In 2016 the FCAI produced a new ATV Safety DVD and brochure to communicate safety issues. These resources are given free of charge to all ATV customers at the time of purchase or are available on the [atvsafety.com.au](http://atvsafety.com.au) website. In March 2017 the FCAI will release an online e-learning course that will clearly spell out the likely contributing factors of crashes, and deliver strategies and tactics for reducing the chances of an incident.

### **Questions:**

#### ***What do you believe are the best ways to communicate to quad bike users about risks and safe use practices?***

The FCAI members currently utilise their dealer networks to communicate safety messages and educate purchasers of ATVs about the safe practices recommended by the industry. We believe that many rural ATV users already have a good relationship with their dealer, and that the opportunity exists at the time of purchase for a frank and honest safety discussion using the 5 Star Safe ATV Guide to communicate best practice. As mentioned above, the industry would like to assist WorkSafe Tasmania to communicate ATV safety messages through the dealers as we do in other states.

Safety messaging reported in various media sources tend to be mixed; a story might report a serious head injury to an ATV rider, but then show a picture of another rider using an ATV without a helmet. Readers are not guided or encouraged to use safety gear by most media outlets, so the culture of poor riding and behavioural practices is reinforced through superficial and poorly-informed reporting. In order for the media to be more effective in improving safety outcomes, they need to be assisted and educated in ATV safety issues.

The FCAI is currently engaging with media outlets to encourage the reporting of positive safety messages and the use of ‘good practice’ photos in ATV stories.

Although communicating the potential hazards and safety practices to users is important, this effort will have limited success on its own whilst there is very limited enforcement of OH&S requirements at work places by government safety agencies. For example, we know helmet use is very low on farms, but helmets are required in the workplace according to WorkSafe Tasmania requirements for

operating plant. From Australian enforcement data collected by the FCAI, very few improvement notices or fines have been issued by the state WorkSafe agencies, so it's no surprise that the helmet wearing rates are between 10-15%. Communicating and advocating good safety practices needs to be supported, encouraged and enforced by WorkSafe Tasmania in order for improved outcomes.

The Farming Federations, and FarmSafe groups currently communicate safe practice to their members, and could become the lead groups to encourage improved safety practices on farms, providing there is coordination and communication between all interested parties.

### ***What do you think are the key safety messages for quad bike users?***

The industry agrees with the key issues listed in the issues paper, apart from the recommendation for the fitment of ROPS. The best research available concludes that Crush Protection Devices (CPDs) can cause as many injuries and fatalities as they may prevent, and this result excludes currently available CPDs from achieving the international Safety Device standards.

One additional message the industry promotes is to follow the manufacturers' guidelines. The ATV has warning labels outlining who should use the machine, the loading and towing limits, and specific recommendations for safe use. The owner's manual outlines both safe riding practices, as well as un-safe practices that can lead to dangerous outcomes.

Following the manufacturers' recommendations, and heeding the warnings will lead to safer outcomes, so the industry believes this should be included in the 'key safety messages'.

As mentioned above, the ATV industry is currently promoting the 'known safety practices' to users of these vehicles through a number of avenues.

### **5 Star ATV Safety Guide**

- ★ Select the right vehicle
  - Choose the vehicle best suited to the task, terrain, riders and loads
- ★ Protect yourself
  - Make sure you are physically fit and able to ride actively
  - Always wear a helmet and protective gear
  - Never operate the vehicle intoxicated
- ★ Be Trained
  - Training will enable you to fully understand the vehicle attributes and limitations, and assist you with the techniques and strategies for safe riding
- ★ Safe riders and loads
  - Never allow children on adult size ATVs
  - Never carry passengers on single seat ATVs
  - Never overload your vehicle, and reduce loads on difficult or steep terrain
- ★ Understand and follow the manufacturer's recommendations
  - Always read the manufacturer's recommendations specific to each vehicle
  - Take note of the manufacturer's warning labels on the vehicle and the owner's manual
  - Maintain and service your vehicle so it's in good working order

***In your experience, what are the most prevalent risk factors associated with the use of quad bikes?***

From the recent coronial inquests in QLD, NSW and Tasmania a number of recurring risk factors can be seen to be associated with most quad bike fatalities:

- Children riding adult size ATVs make up one quarter of fatalities. Adult size ATVs are not designed for children and the manufacturers advise no one under 16 years of age should be allowed on these vehicles.
- Passengers riding on single seat ATVs contributed to a number of fatalities in QLD, NSW and Tasmanian inquests. Single seat ATVs are not designed to carry passengers.
- Only three of the 29 riders involved in the coronial inquests were wearing helmets. We know helmets are the most effective safety device, and that many of these riders died of head injuries.
- Many of the riders involved in these inquests were riding whilst intoxicated, particularly in Tasmania.
- Only one or two of the riders involved (in all inquests) had undertaken any formal training. Contributing factors to the incidents often involved high speed, riding on paved surfaces, inability to read the terrain and conditions, and a lack of strategy and technique that may have enabled a trained rider to recognise and avoid or ride out of the situation.
- The combination of heavy loads and riding on slopes was identified as a contributing factor in a number of incidents.
- The ATV being ridden in situations and activities where it was not designed to be used, and where the activity was warned against by the manufacturer.

**Improving Rider Skills**

**2. Review available training in Tasmania**

The ATV industry is a long-term advocate of improving rider skills and has been delivering rider training programs in Australia for over 25 years. The FCAI provided both QLD and NSW coroners with information on current Australian and North American Industry training programs, but also commented on particular issues associated with some local training course delivery. The ATV industry strongly supports the mandating of rider training for all riders, both for workplace and recreational use.

Unfortunately many 'experienced' riders are not aware of the behaviours and contributing factors that lead to ATV crashes, and inadvertently become involved in incidents that could have been recognised and avoided through the topics completed in a rider training course. The tactics and strategies discussed and practised during these courses are invaluable for both novice and experienced riders.

***Have you utilised training in relation to quad bikes? If so, what was your experience?***

***Is appropriate training readily available in the State? If not, how is it lacking?***

***Do you think training should be mandated (legally required) in some way?***

***What do you think are the barriers to greater numbers of riders using training courses? How could these be addressed?***

The FCAI's training experts with Australian and international training accreditation have had major input in developing and reviewing the current AHCMOM212; Operate Quad Bike curriculum that is now recognised as the nationally accredited program. But the industry believes this course focuses

too much on the OH&S requirements, and not enough time is spent on training riders to recognise dangerous situations, to understand features and limitations of the ATV, and to attain the necessary riding skills required to operate the machine across the wide range of terrains and situations that they were designed to be used in.

On top of the content concerns of the AHCMOM212 course, a separate standards issue exists with many of the courses being delivered in Australia. It is the quality / consistency of course delivery, and ATV knowledge of instructors who are teaching courses. Many instructors have had no formal training in riding techniques, little understanding of 'rider active' methods, and limited ATV experience to enable the development of useful participant strategies and tactics.

In order for the quality of course delivery to improve, all ATV instructors require a refresh of skills and an overhaul of strategies and tactics for improving rider knowledge and strategies. The FCAI is looking at a possible industry solution for the course delivery issues, and would like to work with the Tasmanian government to increase the standards of trainers and participants.

The industry's long held position is that rider training should be mandatory. From our experience, when training is simply recommended and encouraged, uptake is very low. For example the recent NSW Quad Bike rebate system is failing to attract people to training courses, despite offering attractive subsidies to farmers.

The barrier as mentioned above, is that many experience riders can complete basic tasks and manoeuvres with limited skills and knowledge, so they don't believe they need training. However, the lack of good riding technique and ATV knowledge often leads to them into dangerous situations where the machine goes beyond its safe operational limits, and due to the lack of training, they won't be able to recover the situation.

To improve the safety outcomes of users in remote areas, the ATV industry has just released an ATV Safety e-course for farmers and riders who have time or distance barriers impeding their ability to attend a rider training course. This e-course is designed to utilise the [FCAI 5 Star ATV Safety Guide](#) as the guiding principles, and aims to ensure that participants incorporate these principles into safe ATV use.

- To ensure ATV riders can identify typical situations and the contributing factors to crashes, and incorporate this knowledge into the way they use their ATV.
- Riders to become more aware of what type of behaviours are likely to lead to crashes.
- Users understand how rider skill, as well as tasks and terrains need to be considered together in order to evaluate a situation fully.
- Employers and those responsible for rider safety identify risks and encourage safe behaviours.
- Both work and recreation risk situations are identified, and participants are required to complete e-learning modules aimed at lowering risks for the types of riding they engage in.
- This program aims to encourage a culture shift in user behaviours that places safety as the top consideration and outcome.
- The program is not designed or intended to teach riders how to use the controls, nor does it aim to teach physical riding skills. It does not replace physical rider training, but it will identify those groups and individuals with the most to gain from attending such courses.
- The course aims to state the facts on the effectiveness of safety devices/tactics, and dispel the myths associated with the purported benefits of fitting a Crush Protection Device.

The link to the FCAI 5 Star ATV e-course is [atvsafety.snaplearn.com.au](https://atvsafety.snaplearn.com.au)

## **Greater Rider Protection**

The ATV industry is a strong advocate for the wearing of suitable protective gear, as can be seen by:

- The warnings and advice labels on the ATV
- Advice in the Owner's manual
- The 5 Star ATV Safety Guide
- The atvsafety.com.au website
- Detailed industry research proving the effectiveness of helmets on ATVs

### **3. Helmets**

***In your experience, is there a high prevalence of quad bike users wearing helmets?***

***What would encourage greater use of helmets?***

***What is currently a barrier to the wearing of helmets?***

***Would you support the creation of an Australian Standard for quad bike helmets?***

***Should helmets be mandatory (legally required) for quad bike riders?***

The industry would like to see helmet wearing mandated for all ATV users as:

- Helmets are effective in reducing deaths by 42%<sup>1</sup>
- Helmets reduce the risk of non-fatal head injuries in ATV accidents by 64%<sup>1</sup>
- The voluntary helmet wearing rate is extremely low
- Incentives and advertising to encourage uptake have not been effective

The industry does not believe the lack of an Australian Standard for quad bike helmets would impact any push to improve wearing rates for riders.

Currently there are many types of helmets suitable for ATV use which meet the AS1698 Australian Standard. There are open face and 'shorty' type helmets that do not impinge vision and allow a certain amount of air to move through.

Last year an Australian ATV distributor developed an ATV-specific helmet for Australian conditions. This helmet meets the ECE 22-05 European Standard which is now accepted in all states of Australia.

The helmet was designed to overcome the negative complaints by riders and has many benefits:

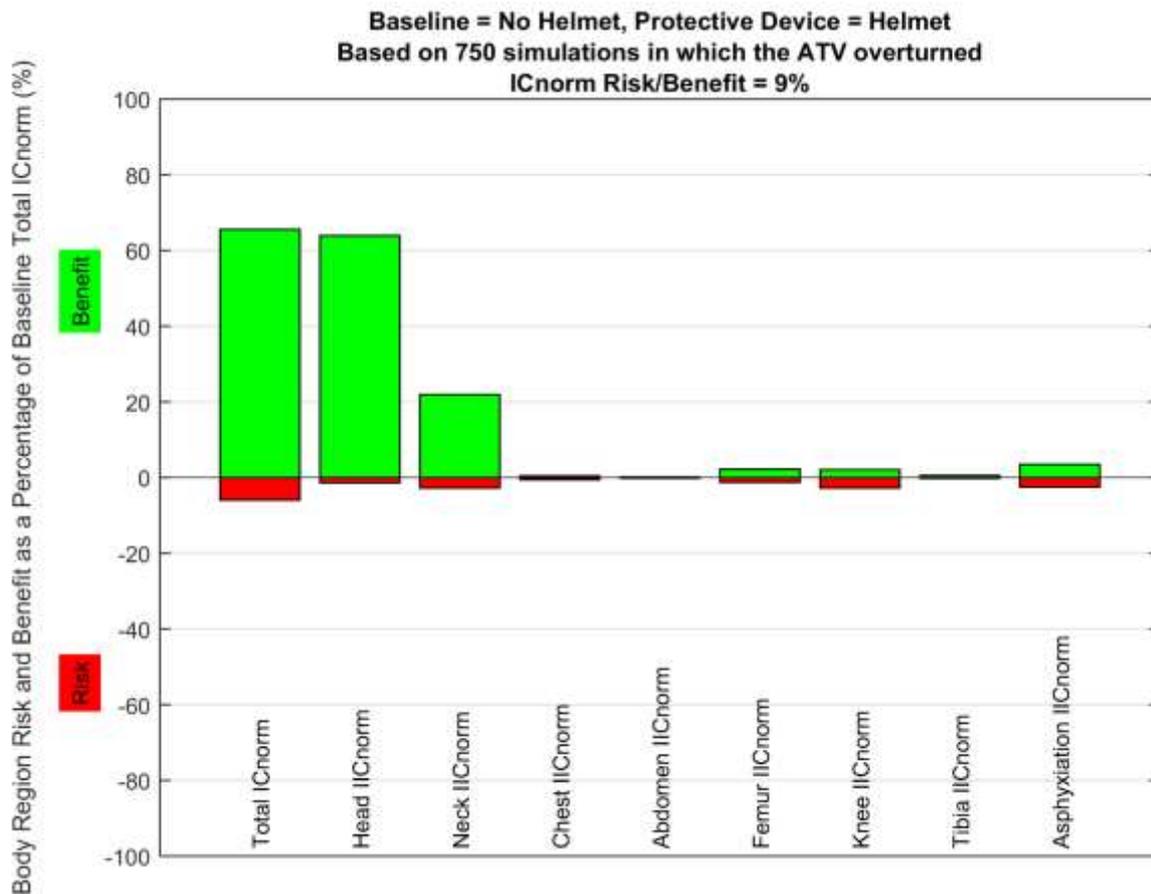
- This helmet is light weight, but provides a high level of protection
- It has very good ventilation in order to keep the air moving through
- The areas around the ears have been modified to improve hearing and allow for fitment of two-way radio and blue-tooth speakers for communication
- Various attachments can be added to deal with the sun, dust or flies
- This Shark / Yamaha design is far superior to the NZS 8600:2002 standard as it can be used on ATV, Side by Side Vehicles, and motorcycles.
- It is not speed limited like the NZ Ag Hat (35kph), and can be used in all situations including on-road.

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<sup>1</sup> Rodgers GB. The effectiveness of helmets in reducing all-terrain vehicle injuries and deaths. *Accid Anal Prev.* 1990;22(1):47-58. 2005

There is no excuse not to wear a helmet, and from FCAI funded research, we know helmets are the most effective safety device for riders. We do not believe in developing a new ATV specific helmet standard, or adopting the NZ standard in the interim, as better standards and helmets already exist.

Research by Dynamic Research Inc has shown the safety benefits of helmets by body part in ATV roll-over events. This study ran paired simulations with and without helmets to determine the safety benefits of helmets.



**Figure 1.** This figure compares the risks and benefits of wearing a helmet during an ATV roll over event. In this case the benefits of wearing a helmet far outweigh the very small risk of injury caused by the helmet (9%). Helmets meet the guideline for suitable safety devices contained in international standard; ISO 13232.

#### 4. Rollover Protection

The safety and efficacy of CPD fitment to ATVs was debated during each of the QLD, NSW and TAS coronial inquests. At the QLD inquest a number of experts presented substantial amounts of evidence, and an independent engineer from the University of South Australia reviewed much of this research.

At the conclusion of this evidence, the QLD Deputy Coroner was unable to conclude that CPDs would be effective in preventing injury or death, so declined to make any recommendation for the fitment of CPDs. Instead, he recommended only that further research be carried out.

The NSW coroner also recommended that further research be carried out to analyse the risks and benefits, and did not make a recommendation to fit CPDs.

The Tasmanian Coronial Inquest heard evidence for and against CPD fitment and, after hearing the evidence of the DRI expert engineer Mr Kebschull, Counsel Assisting the Coroner submitted that “the evidence of Mr Kebschull should be preferred. It is clear from that evidence that no recommendations should be made in respect to the fitment of ROPS to quad bikes.”

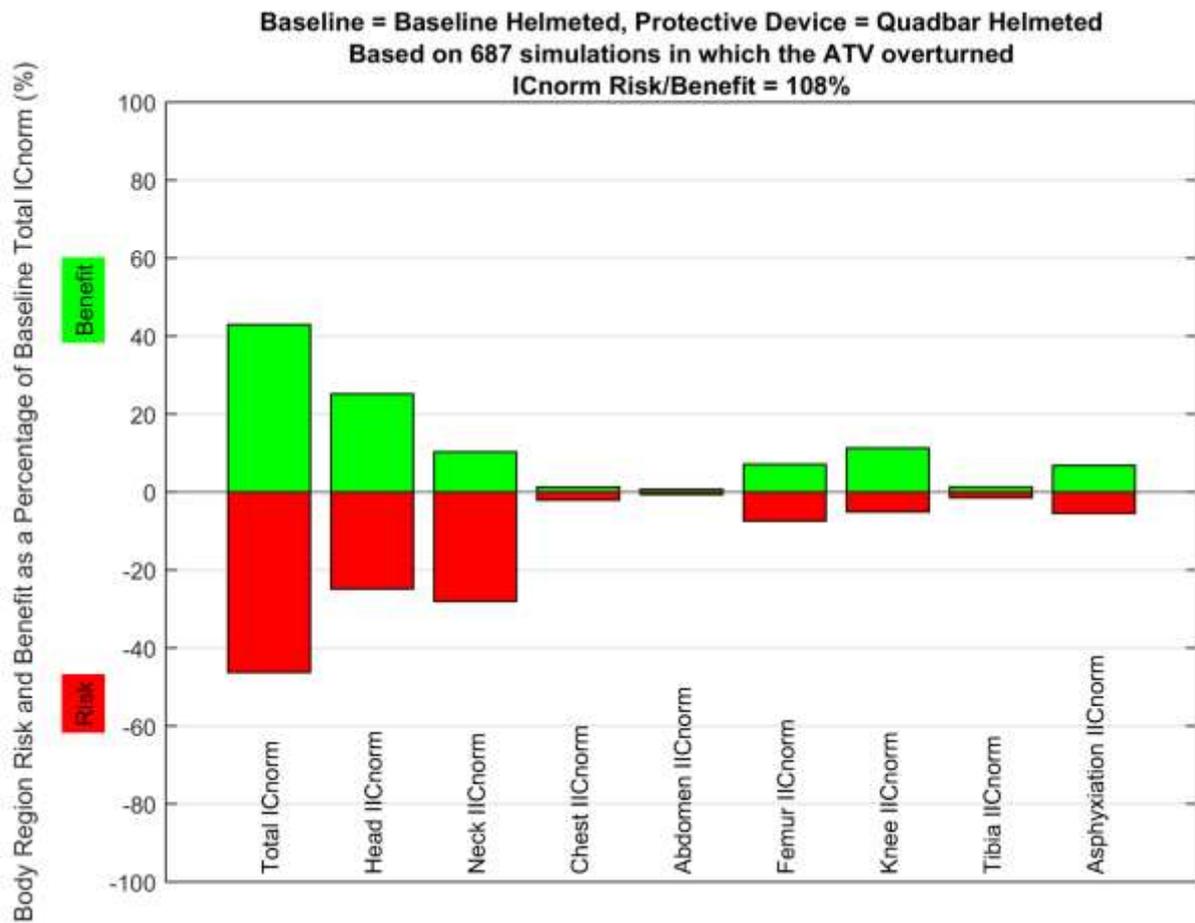
The FCAI agrees entirely with that submission.

### **The ATV Industry Position on CPDs**

- The position of the FCAI has been, and remains, that there is no credible research demonstrating the overall efficacy, safety and effectiveness of CPDs such as the Quadbar.
- Instead, the manufacturers and other advocates of CPDs argue that if the ATV industry does not prove that CPDs are not an appropriate safety device, then it follows that they *are* an appropriate safety device.
- As with any other product, it is the responsibility of the manufacturers and advocates to establish the safety and benefits of the device(s) that they propose. This has not been done in the case of the Quadbar, or any other CPD.

Dynamic Research Inc has carried out a significant number of computer-simulated rollover events to determine the safety benefits of the Quad Bar. These rollover scenarios, based on full-scale calibration testing and real life rollover events, were carried out in the same way as the experiments run to determine the benefits of helmets for ATV riders.

As can be seen in Figure 2., the CPD provided benefits, but an equal number of risks. The ISO 13232 Standard allows for up to 12% risk/benefit ratio in order to achieve the requirements for a safety device. The study found the Quad Bar can produce as many injuries as it may prevent, and it had a 108% risk/benefit ratio. The Quad Bar does not meet the guideline for suitable safety devices contained in international standard; ISO 13232.



**Figure 2.** This figure compares the risks and benefits of fitting a CPD during 687 ATV roll over events. In this case the Quad Bar caused as many injuries as it prevented with a risk/benefit ratio of 108%.

## Government-led Action

### 5. National standard for quad bikes

The FCAI supports the use of the ANSI SVIA-1 2010 Standard as the minimum allowed standard for ATV manufacture and for those models distributed in Australia. During several updates of this standard a number of improvements have been made to various aspects of vehicle design including with respect to their:

1. Service Brakes
2. Parking Brake/Parking Mechanism
3. Mechanical Suspension
4. Engine Stop Switch
5. Manual Clutch Control
6. Additional Clutch Control for Utility ATVs
7. Throttle Control
8. Drive Train Controls
9. Neutral Indicator
10. Reverse Indicator
11. Electric Start Interlock
12. Carry Bar
13. Flag Pole Bracket
14. Manual Fuel Shutoff Control
15. Handlebars
16. Operator Foot Environment
17. Lighting Equipment
18. Spark Arrester
19. Tyre Marking
20. Tyre Pressure Gauge
21. Security
22. Owner's Manual/Operator's Manual
23. Vehicle (ATV) Identification Number

The ANSI SVIA-1 2010 standard is currently used and recognised in over 30 countries around the world and is updated regularly.

That standard is **mandated** and is closely monitored by the United States Consumer Product Safety Commission (CPSC). The CPSC has exclusive federal jurisdiction over the safety of ATVs in the US. It is an independent federal agency responsible for investigating and regulating the safety of consumer products. It has the authority to impose product safety and performance standards. It is submitted that Australian authorities should be satisfied that this standard will continue to be monitored, further improved upon and developed in accordance with technological advancements and better understanding of issues related to vehicle safety.

One clear advantage of utilising the US standard is that it allows a small market such as Australia to draw upon and take advantage of the greater resources and technological advances made in larger international markets. There is also the practical difficulty of manufacturers being required to produce different products in different small markets due to local variances in regulations.

Improvements incorporated into this standard will be built into new vehicles and these enhancements will flow through to the ATVs imported into Australia by FCAI members. It is submitted that there are good reasons to adopt the US ANSI / SVIA standard (as amended and updated from time to time) which is currently recognised in over 30 other countries around the world.

### ***Do you support the development of an Australian Standard for quad bike design?***

The FCAI supports an Australian Standard based on the ANSI SVIA ATV standard and process outlined above, it does not support the poorly conceived draft for an Australian standard as put forward by KND Consulting (Keith Simmons) to Safe Work Australia in 2015.

During the QLD inquest it was highlighted that the proposed standard put forward by Mr. Simmons was highly controversial, to say the least. It is based in the (passenger vehicle design) concepts which also underpin the proposed Australian Terrain Vehicle Assessment Program (ATVAP) and which, for the reasons discussed at the inquest, the FCAI rejects as being irrelevant to ATVs. On his own admission, Mr Simmons is not an engineer, and yet he purported to advance a standard for the design of vehicles in relation to which he had no formal qualifications and questionable expertise.

### **6. Consumer safety rating system**

The University of NSW, Traffic and Road Safety (TARS) Group have proposed a star rating system for ATVs and SSVs.

The FCAI supports the idea of a star rating system for ATVs (and SSVs), however, it is the strong position of the FCAI that the proposed TARS system (“ATVAP”) needs further development.

The need for further development and reconsideration of certain components (at least) of the testing appears to have been conceded by the TARS authors at both the NSW and Queensland Inquests.

The Queensland Coroner, after having heard detailed and extensive evidence on each of the individual tests, components and methodology adopted by TARS in the QBPP reports, stated at paragraph 349 “More work needs to be done before it can be properly implemented,” and highlighted the need to ensure that the tests were evidence based.

### ***Would a safety rating system affect your purchasing choices in the future?***

#### ***If a system was implemented, what do you think should be included as part of the system?***

It is important that unintended potential adverse consequences of proposed criteria be adequately considered so they can be avoided, and that, accordingly, any star rating systems should be based on a strong correlation between the performance indices tested, and demonstrated improved safety outcomes.

ATVs and SSVs are entirely different vehicle types, and must be considered separately and not within the same class, as has been proposed by the ATVAP system.

## 7. Rebate Scheme

Rebates for safety devices should be awarded to evidence-based solutions.

In the case of subsidising helmets, the industry is firmly behind encouraging this device due to the documented evidence demonstrating large safety improvements for ATV riders. If Tasmania was to offer subsidies, there should be no debate that helmets be the first safety device to be included.

Although there is little evidence to show SSVs to be safer than ATVs, in situations where farmers are required to carry heavy loads and passengers, this may be a more effective solution for those situations. The ATV industry encourage users to choose a vehicle that is 'fit for purpose'. ATVs will always be preferred by some farmers due to their small size and nimbleness, off-road ability, and the ease with which a rider can mount and alight from the vehicle... SSVs don't necessarily have all these abilities.

If a rebate encourages farmers who regularly carry large loads and passengers to buy an SSV instead of an ATV, it may be possible to see safety improvements for these uses.

Similarly, while the low take-up of training courses in Australia has made it difficult to undertake scientific research in order to measure the improved safety outcomes that can result from training, many of the contributing factors to fatalities established in the recent coronial inquests demonstrated a need for better understanding of vehicle dynamics, situational awareness and of riding skills and tactics. These skills are an integral part of modern rider training courses which the industry believes can improve safety outcomes.

As mentioned above, there is no evidence to support fitment of CPDs to ATVs, so the industry would not support an un-proven device like CPDs in a rebate scheme. Both NSW and QLD coroners recommended that further study is required on CPDs.

### ***Would a similar rebate scheme deliver improved quad bike safety in the Tasmanian context?***

The FCAI believes that evidence-based rebates should be offered for helmets and rider training, but this should be in conjunction with legislation requiring riders to wear the helmets and complete a training course.

### **Conclusion**

The FCAI anticipates that the material contained within this submission can inform the development of Tasmania's Quad Bike Safety Plan, and the information enclosed demonstrates the industry's expertise, efforts and willingness to improve rider safety outcomes.

The ATV industry looks forward to working closely with the Tasmanian Government in order to achieve the outcomes both parties are striving for.