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Quad Bike Safety in Tasmania: Issues Paper

Thank you for the opportunity to comment. I strongly support the aim to reduce fatalities and injuries involving quad bikes (all-terrain vehicles or ATV's). Indeed improving the safety of ATVs is a national challenge.

A consistent unified approach from all governments and stakeholders is important.

I provide these comments as an individual with over 30 years experience in work health and safety (WHS), in operational, policy and regulatory roles; most recently as Director Work Health and Safety and Workers Compensation Policy at the Australian Chamber of Commerce and Industry and its representative on Safe Work Australia and Asbestos Safety and Eradication Council. I have no personal or financial interests in any part of the ATV 'chain' – I have no investment in manufacture or supply, nor am I associated directly with users. I offer these comments as an experienced professional with an interest in improving safety.

What we know

Not all incidents involving ATVs (or quad bikes) are work related, but many are. When ATVs are used for work, the legislation on work or occupational health and safety applies. ATV's are considered mobile plant, and Safe Work Australia has produced a national information sheet Quad bikes in rural workplaces which outlines advice on selection of the most appropriate vehicle, information on crush protection devices, rider training, personal protective equipment, and other hazards.

Safe Work Australia (SWA) is a national policy body. It does not regulate work health and safety laws but it does lead the development of policy to improve work health and safety (WHS) and workers' compensation arrangements across Australia. Tasmania is represented on SWA.

According to Safe Work Australia's website on quad bikes from 2011 to 2016

… there have been 106 fatalities involving quad bikes in Australia. Of these fatalities, 49 per cent were workers and 51 per cent were people riding recreationally.

In the SWA detailed list of fatalities for 2016 there are 7 out 10 listed as recreational and the statistics for children 16 years or under are fewer with only 1 out of 10 listed for 2016.

In the SWA Summary of Quad Bike Fatalities (2011–2012)

- *One-third (33%) quad bike fatalities occurred on terrain where an incline was noted by investigators (12 out of 36 fatalities)*
- *Almost half (47%) of quad bike fatalities occurred on uneven ground*
- *Over half (53%) of quad bike fatalities involved rollovers (19), with 17 non-rollovers (collision/thrown from the quad/other)*
- *A potential weight imbalance (e.g. through carrying spray tanks, cargo, passengers, towing heavy trailers) was noted for one-quarter (25%) of quad bike fatalities*
- *In 19% (7) of quad bike fatalities the rider was wearing a helmet, 39% (14) were not wearing a helmet and 42% were unknown*
- *58% (21) of the quad bike fatalities* are known to have *occurred* during recreational use*, 42% (13) occurred* during *work and the remainder were undefined*
- *Over three-quarters 78% (28) of the quad bike fatalities were males. Of the eight females who died, half were passengers on the quad bike*
- *Children under the age of 16 were involved in 19% (7) of the fatal incidents*
- *None of the 36 fatalities mentioned any form of rollover protection on the vehicle*

Whilst there has been some reduction in fatalities of those under 16 years, clearly more work needs to be done to

- raise awareness of the risks involved
- ensure children do not use adult ATVs
- address recreational use

When considering longer-term sustainable outcomes the Tasmanian taskforce should work towards:

- Using a united approach consistent across whole of Australia
- Government-led, consistent communication and awareness programmes
- Using the full suite of risk management based on available evidence

Risk management

A standard risk management approach looks at a hierarchy of solutions or controls

- **design and engineering** controls
- **administrative** controls such as education and awareness, limiting access to keys, etc.
- provision of appropriate **personal protective equipment**

Inevitably a combination of such controls is often the most effective.

All actions need to be developed using credible data from sound research. In line with Australian Government's Best Practice Regulation, relevant international standards must also be considered.

Most ATVs are manufactured in United States. These manufacturers have worked on improving the design and have worked to promote responsible purchase and operation of their equipment. Their efforts should be further supported to improve design, improve communication and selection, to encourage administrative controls and use of appropriate protective equipment.

Prevention is the key, so we need national actions that

- Improve **selection** of appropriate vehicle at purchase
- Improve the **range of controls** from design to personal protective equipment
- Increase rider/driver **awareness of risks**
- Improve rider /driver **skills and management**

Improve selection

Manufacturers do already provide some information and training, and are active in advertising on ATV safety. These actions are based on the most recent global knowledge and global experience. It would be useful to review this industry information when developing any Australian guidance. To be most effective, any interventions must be accompanied by consistent national information.

Information should

- improve awareness of the risks for all in the supply chain including the suppliers and users
- provide advice on appropriate control measures
- support a national training programme

It is self-evident that ATVs should be used only for the purposes for which they are designed. So at selection, information must be available and promoted, that clearly defines the purpose of the particular ATV and that reinforces that the ATV should not be used beyond the manufacturer's specifications – its carrying capacity, the slope across which it can safely travel, that it is not suitable for children to drive etc.

In order to ensure that ATVs are fit for purpose

1. the needs and intentions of the user should be identified

2. the attributes of the vehicle to meet these needs should be considered

3. the supplier and others with relevant and up to date knowledge should be consulted as to its safe and appropriate use

Use of star rating system for awareness

A star rating system (a chart similar to that developed by the industry in Australia for example the FCAI 5 Star Safe ATV User Guide) would certainly assist the purchaser in the selection of an appropriate vehicle.

Incorporating a communication and awareness programme would help promote responsible purchase and operation of the equipment. Governments should partner with industry on criteria for selection of appropriate devices for the tasks and communicating the inherent risks of these tasks. The communication of this information should be throughout the supply chain.

A star rating system to help with selection has been developed by industry. Designers and manufacturers should use it to make ATVs with higher ratings; suppliers, buyers, and users should use it to help selection of the right vehicle for the planned task. The star rating should take into account, among other things:

1. The implications of the tasks required and the active work performed by driver/rider – frequently getting on and off the vehicle, for example

2. Which specific task/s the equipment is designed or appropriate for. More should be made of invalidation of warranty when ATVs are "modified" beyond manufacturer's instruction

3. That unless specifically allowed by manufacturers' instructions there should be no passengers on ATVs

4. That no child should operate an adult size ATV

5. What are appropriate environmental conditions and terrain e.g. slope

6. Whether and what authoritative national driver/rider training is provided before use of the equipment

7. What Personal Protective Equipment is provided e.g. seat belts, appropriate clothing or recommended helmets

8. What warning and guidance signage is provided

Most States and Territories have produced some guidance. For example Victorian WorkSafe has produced a rollover assessment tool for farm use. It cross references tasks against typical farm terrains. There is also a Quad Bike on Farms Checklist.

It would enhance effectiveness if there were nationally consistent guidance. This should involve a review of all available information, including that produced by the industry.

A combination of Control measures – design, administrative and personal protection

Previous examinations on this issue included such comments and recommendations as:

• an unacceptable risk is associated with the **use of adult sized ATVs by children** aged under sixteen years

• an **education programme** is needed

• encourage riders of ATVs to **wear appropriate helmets** at all times

There are other factors that have been implicated in accidents involving ATVs, some demanding engineering/design controls, some needing administrative controls, and some needing personal protective equipment.

Factors include

- the degree and quality of driver/rider's experience, training and physical condition
- fatigue and alcohol
- the condition and maintenance of the ATV itself
- the environmental situation, the terrain and other conditions
- poor maintenance including brakes and tyres
- failure to follow manufacturer's guidelines, such as overloading or modifying the ATV, use by a child or an additional driver, use for towing, etc.

For best effect, rather than a select few, a combination of these controls should be used.

Some suggested Control measures

Manufacturers are best placed to make recommendation on other design factors; these are just some suggestions that have been raised in my experience.

Design – audio/light indicators

Engineering controls to improve quad bike stability and safety could be an audio buzz with dash lights for ground slopes. Or emergency warning devices – similar to that available in cars.

Some suggest lowering the centre of gravity as an improvement to safety. ATVs are specifically designed with a low centre of gravity already – to further lower the centre of gravity or provide longer wheel bases, whilst possible, could create issues when travelling over rough terrain; in general, the lower the centre of gravity, the less ground clearance.

Design – constrain capacity for speed

Speed reduction. The speed of quad bikes with a 750 cc engine is up to 100 km per hour. It may be feasible to build in speed constraints that cut in on uneven ground or on slopes, for example.

Design – change seating

In conjunction with other controls, consideration could be given to changing the seating configuration for single person operations.

Design - Retrofitting of equipment

Manufacturers have expressed reluctance to risk upsetting/altering the low design centre of gravity by adding Frames / Roll Over Protection (ROPs) to existing manufactured ATVs. Rollover protection Crush Protection Devices (CPDs), or Operator Protection Devices (OPDs) are other terms used. Claims have been made that use of ROPs still raises concerns such as a body or body part protruding from the protection area.

Concerns that remain about this type of retrofitting:

I. Changing the individual design parameters is not recommended by manufacturers

II. Manufacturer's warranty and any insurance may be voided

III. The considerable expense often involved in a retrofit

IV. Supplier/installer liability

V. Lack of expertise available to install or retrofit

VI. Time required for equipment to be retrofitted

VII. Any change to driver/rider competencies required and how that may be managed

In summary any retrofitting or alteration to the design or use must not be done outside of the manufacturers instructions.

Administrative – restricting access

Consideration should be given to developing a mechanism for isolating the keys, such as keeping keys located in a locked access area. Use of remote keys, where the vehicle can be activated only by a person with a key in their pocket in the immediate vicinity of the vehicle, might be considered.

Administrative- Australian Star rating system

Such a consumer rating system has been developed by industry and should be used as basis for developing a national system to help consumers assess a

vehicle before purchase. A star rating would help the purchaser choose the appropriate vehicle for their needs; it could be something similar to the voluntary Australasian New Car Assessment Program (ANCAP) ratings available for motor vehicles.

Administrative – National training and national awareness raising programme

1. National accredited training

- A national unit of competency already exists (AHCMOM212A Operate Quad Bikes). We should review current training modules for national application
- Mandate accredited training
- Ensure satisfactory quality of training and training providers

2. Raise public awareness of risks, star rating system and appropriate control measures in a joint campaign with industry. Such a programme should use video, TV, apps and social media

Protective Equipment

We should encourage use of helmets and where appropriate, seat belts, to increase safety and decrease injuries. Ideally helmets should be mandatory for quad bike riders/drivers but an appropriate transition is needed.

We should use the New Zealand standard for quad bike helmets NZS 8600:2002 or equivalent in Australia. Note that according to advice from Heads Of Workplace Safety Authorities Quad Bike Safety Strategy there is a recommendation to adopt NZS 8600 for helmets or an international equivalent.

Recommended helmets should be for on-road and off-road use, recreational or work use. Mandatory non-work related helmet use is challenging, but similar to helmets on bicycles can be mandated for public roads and would become more acceptable on private property with national awareness programmes.

Again, raising public awareness of risks and the benefits of helmets to minimise injuries through a joint campaign with industry is essential. Best effect for such awareness programmes is through all formats for communication such as video, TV, apps and social media.

Australian Standard for ATVs

ATVs are mostly manufactured in the USA to US standard. This standard should be reviewed for application in Australia to determine if there is any

need to add anything specific for conditions or use in Australia. More evidence is required on what is specific to Australia before considering the development of an Australian Standard on ATVs. If the US standard is appropriate here, let's not reinvent the wheel.

A Rebate scheme

A national rebate scheme could be useful to encourage assessment of existing vehicles against the **full range of control measures**. It should be geared towards ensuring the purchase of appropriate ATVs for the consumer's need, and improvement of skills through national training and wearing of helmets. A rebate scheme that just supports ROPs is too specific and may discourage other control measures. Any system or scheme should promote responsible purchase and responsible operation of ATVs.

Some have claimed that CPDs (or ROPS or FOPs) give a false sense of security. They can encourage those already at risk to use the equipment inappropriately; for example by carrying even more goods/farm bales/other items, that might shift the weight to the rear or alter the centre of gravity and risk rolling or tipping. Anything outside of the manufacturer's specifications should not be encouraged.

Increase Awareness and Improve skills - National Guidance

Communication should be consistent and reinforced wherever possible. At purchase, many ATVs include guidance on the correct safe operating procedures for both pre-operation and operation. Industry available guidance should be used to develop a national guide. Most jurisdictions have provided some information. All sources need to be consolidated into a national guide.

Consistent nationally agreed information could also be reinforced on **warning labels** on the ATVs.

Guidance that illustrates and provides instructions for ATVs should include some of the factors listed above (and in labels in appropriate places on the ATV itself)

- No operation by child /minor
- No drinking and driving
- No operation without training
- No operation without assessing the terrain/environment
- The facility to communicate with others must be available when used in remote locations or in isolation
- Advice on shifting weight and risks of overloading
- Information on moving ATVs safely

- Ensuring adequate maintenance of ATV e.g. brakes
- Reinforcement of manufacturer's guidelines
- The dangers of use on slopes and uneven surfaces, and correct use

Summary

A national approach is key. The best outcomes would be gained by

- Using a united national approach that is consistent across the whole of Australia and involves industry
- National Government-led, consistent communication and awareness programmes
- Using the full suite of risk management tools, not just a selected few, based on available evidence,

We need national agreed information, national awareness-raising combined with nationally accredited training.

One of the keys is to ensure the right vehicle is selected for the task, and that a pre-ride assessment of all the factors occurs. A national star rating system for selection would prove very useful.

Using a risk management approach that involves a combination of design /engineering controls, administrative measures, and personal protection is often the most effective. Suggestions for design and administrative solutions include audio/light mechanisms, restrictions on access to ignition and speed constraints. These should be explored with industry and users.

Tasmania should consider the range of enforcement tools already available, rather than consider mandatory obligations specifically for ATVs as the only mechanism. Relevant international guidance and standards are available; existing rating systems, industry guidelines and protective equipment must be considered and evaluated before developing new regulations or standards.

Any resulting national response should outline how the range of control measures is to be implemented and should specify transition arrangements.

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