



Full Throttle!

Human Powered Vehicle
8 hour race

Saturday 26 May 2018

Barmaryee Sports Complex, Yeppoon

Rules and Regulations

FOR MORE INFORMATION



The rules and **regulations have been adapted with permission from MTC HPV “rules and regulations”** and wherever possible mirror that event. The Yeppoon Full Throttle HPV race is designed to be a **preparation and lead up event** to that held in Maryborough.

Whilst this is a race, the primary goal of the event is for students to gain knowledge of materials, tools and equipment, as well as manufacturing processes. Interpersonal skills associated with group and team work are also developed through HPV racing.

In some places rules and regulations not relevant to this event have been deleted e.g lighting. In other places they have been substituted. Any changes to these rules will be distributed via email before the event. Organisers reserves the right to vary the HPV classes and awards depending on number of entries.

GENERAL INFORMATION

Information can be obtained by contacting either Peter Jensen or Charlie Platts:

Enquiries: Peter_Jensen@emmaus.qld.edu.au
(07) 49 235 700

or cplat37@eq.edu.au
(07) 4925 1333

HPV - HUMAN POWERED VEHICLES

Teams participate in an 8-hour race on the main course. Collaboration with local industry or community groups in design and construction of a vehicle is allowed. **Use of commercially or professionally designed vehicles is discouraged but not excluded. A major prize will be allocated to the fastest school built vehicle.**

CATEGORY DESCRIPTIONS

General

- Junior (Boys, Girls, Mixed) – years 7 to 9
- Senior (boys, girls, mixed) – years 10 to 12
- SWD (students with disabilities)

SBV – SCHOOL BUILT VEHICLE

Use of commercially or professionally designed vehicles is **not allowed**.

Junior - Yr 7 to Yr 9, Senior – Yr 10 to Yr 12, Boys/Girls/Mixed in each age group. SBV will be eligible for prizes in their age/gender category as well as school built categories.

This category encourages school-based design and construction.

Entrants are required to design and build the vehicle, or make significant modifications to an existing vehicle, “in school”. Design decisions should be made collectively by the team. All construction, with the exception of welding, should be completed by team members. Teams entering a school built vehicle should indicate this on their entry form.

ELIGIBILITY

Schools have to show proof of ownership that they built the bike in school.

Proof of ownership of the BUILD could take the form of original sketches, photos of white-board planning sessions, hand drawn technical drawings and photos of the bike during the build process, significant story and anecdotal events relayed to scrutineers. If insufficient evidence is provided then the team will be entered into the general HPV category.

TAN – Tandem - (age and gender unrestricted)

This category encourages school-based design and construction of a 2 seater vehicle. Variations to single seater rules are indicated bold with an asterisk* throughout these rules and regulations.

SWD – Students with Disabilities (Hand Powered and General Divisions)

- **D1 Students with disabilities – Hand Powered.** This category encourages inclusion of students with mobility impairment. Up to 4 able-bodied students may be included in the team. A team may enter 2 vehicles (e.g. 1 x hand powered, 1 x foot powered) but may have only one vehicle on the track at any one time. Lap scores for the 2 vehicles will be added together. Combined school teams are permitted.
- **D2 Students with disabilities – General.** This category encourages inclusion of students with Education Queensland Low Incidence Disabilities. Each student's verification of disability must be endorsed by their Principal. Team managers may be required to show that each rider can safely negotiate the race track.

A major Prize will be awarded to the fastest school built vehicle and a trophy to the fastest school built vehicles in each category.

CIRCUIT

The challenging circuit reflects real-world conditions. This means that parts of the sealed surface are not billiard table smooth. The circuit will take place at the Barmaryee Sport Precinct. Students will race down the main straight with a fast sweeping right hand corner, a hairpin at the bottom of the course, follow the course back up to the top loop where the pit area is located. The track is approximately 1.3km in length. Camping and spectator areas are available on a grassed section adjoining the main straight.

SECTION 1: RULES

1 ELIGIBILITY OF TEAMS

- **1 HPV teams** will consist of a maximum of 10 enrolled high school students. Teams must consist of a minimum of 6 and a maximum of 8 riders, pit crew make up the 10.
- **2 Age of riders** – Junior teams shall consist of enrolled school students up to Year 9, while Open entries may contain any enrolled High School students, up to a maximum 18 yrs of age at start of event.
- **3 Composite teams** from two or more schools are eligible to compete only where neither school can provide enough riders to form its own team. This should be noted on your entry form. However, headhunting riders to form an elite team is outside the spirit of this competition and will not be approved.
- **4 Extra care** must be taken in the case of composite teams to comply with excursion permission requirements.
- **5 Gender Balance** – For a Mixed team, a minimum of 4 (four) riders shall be female. In a Girls team, all riders shall be female. In a Boys team, gender is unrestricted.
- **6 Subject to the discretion** of the Race Director, sick or injured riders may be replaced during the race by pit crew.
- **7 Any rider substitution** must not alter the team's eligibility for the category in which that team is racing.

- **8** Team members may be excluded for inappropriate behaviour. Such members cannot be replaced. Team managers may be asked to remove those excluded students from the site.
- **9** Teams reduced to less than 6 riders, through exclusion for inappropriate behaviour, may be disqualified, and therefore unable to continue.

Team identification: Event officials, managers, riders and support crew will be the only persons allowed in the pit area. Team managers are asked to police this rule.

Team sponsorship: Teams are invited to display on their vehicles and uniforms any signs/logos that promote healthy school, industry and community links. Team sponsorship must be consistent with the health and welfare of young people and the overall objectives of the Yeppoon Full Throttle event. Signs/logos/stickers etc representing cigarettes, drugs, alcohol or illegal substances/practices or immoral content are unacceptable. If you have any doubts about the suitability of a sponsor, please contact the race director. Organisers reserve the right to remove any offensive signage.

Publicity: Through email, teams will be kept informed about HPV Race activities, issues, and other newsworthy events. The organisers will also be promoting the program through general media releases. **If you refer to the event in any publicity material, always refer to it as the Yeppoon Full Throttle HPV Race.** Please keep Charlie Platts (Yeppoon SHS) or Peter Jensen (Emmaus College Rockhampton) informed of any newsworthy developments in your area that would be suitable for broader media release.

2 INFRINGEMENTS

2.1 Team managers reporting incidents: With regard to infringements of these competition rules, any complaints from teams or support groups must come through the team manager, to the Race Director or his appointee.

2.2 Track marshals reporting incidents: Marshals may make verbal incident reports to the Race Director after reporting to their own team manager. These will be followed up with a written report if any action is required.

2.3 Pit area infringements: Race officials may randomly check that only authorized personnel are present in pit areas infringing teams may be penalised.

2.4 Appropriate forms: Incidents must be reported, or protests lodged, in writing to the race director or his appointee. Information shall include the time and description of the incident and vehicle numbers of the competitors involved. Forms to do this may be collected from the admin tent.

2.5 Time limitation: Incident documentation must be presented to the administration shelter no later than 30 minutes after the incident.

3 PENALTIES

3.1 Penalties for infringement of the event regulations may take the form of a timed stoppage, disqualification of a rider or disqualification of a team from competition.

3.2 Unless noted otherwise, a verbal warning will be given for a first offence. A second offence by that team will result in the vehicle being black flagged and required to serve a timed penalty stop, either in pit lane or trackside (penalties may vary according to the offense and be decided by the race committee). No work or driver changes may be undertaken during these stoppages. For subsequent offences, the stoppage time may be increased or other penalties imposed at the discretion of the race director.

3.3 Where the race director finds that a vehicle has lost time due to aggressive or inappropriate riding by another competitor, the offending vehicle may be withdrawn while reasonable repairs are carried out on the affected vehicle.

4 MARSHALLING

4.1 All teams will be required to provide marshals (or students under the supervise on of an adult) for part of the race. Length of time marshaling will depend on number of entries. A timetable, instructions and requirements will be provided to each team prior to race day.

4.2 Each team should also have an adult volunteer available for part of the race day to help at the Race Administration Tent. Length of time will depend on the number of entries. A timetable, instructions and requirements will be provided to each team at registration.

SECTION 2: On – the – Day BEFORE THE RACE

1 REGISTRATION

On arrival team managers should report to administration/scrutineering with the HPV, team members, manager, licences and scrutineering checklist. Vital information, numbers, rosters etc will be disseminated at that time.

2 SCRUTINEERING

2.1 Teams should make every effort to have their vehicles scrutineered between the hours of 3pm and 9pm on Friday 25th May. Late arrivals or inspections on the Saturday morning will require arrangements to be made with the race organisers prior to the event.

2.2 Scrutineering will take place in the clearly marked inspection tent.

2.3 All members of the team should attend scrutineering.

2.4 Teams should have the scrutineering checklist completed to be handed to scrutineers.

3.1 Prior to practice, all vehicles shall pass scrutineering. Vehicle specifications, safety gear will be checked.

3.2 Vehicle control and stability must be demonstrated during scrutineering.

3.3 Vehicles that fail scrutineering may, at the sole discretion of the Race Director, be allowed to compete in the event. This may be in a 'demonstration' capacity only. Such vehicles and teams may not be eligible for any of the event awards.

3.4 Vehicles that fail scrutineering due to safety issues will not be allowed to compete unless those issues are rectified.

3 PRACTICE SESSION (7:00am – 8:00am)

The track will be available for a timed practice session from 7:00am to 8:00am. It is the expectation that all team members experience the track prior to the race start.

4 PRE-RACE BRIEFING (8:15am)

All team members should attend the pre-race briefing at the start / finish line.

5 GRID POSITION, ASSEMBLY AND WARM-UP LAP (7am – 8am)

Grid positions will be allocated according to practice lap times. If a team does not record a lap time, they will be placed at the rear of the field for the start.

6 TEACHER FEATURE (8:30 am)

The aim of the Full throttle “TEACHER FEATURE” is a novel way to involve more team members in the HPV racing experience. Each team will race their vehicles with their team managers at the wheel over a 3 lap sprint. Starting positions will be randomly drawn out of a hat. Failure of a team to participate in the TEACHER FEATURE will deem them starting the main race from the rear of the grid.

SECTION 3

3.1 THE RACE

1 RACE START (9am)

The race will be started with the dropping of a green or Australian flag.

2 SHORTENED RACE

In the event of inclement weather or other factors, the Race Director may at his/her discretion shorten the event. The winner will be the team that has completed the most laps when the race is stopped.

3 RACE FINISH (5pm)

The race will conclude with the waving of the black and white chequered flag, 8 hours after the start. The winners will be determined by the laps completed at the 8-hour mark. Where a vehicle has started a lap prior to fall of the flag, that lap must be completed. The vehicle completing the most number of laps in each category in the race period wins that category. The vehicle completing most laps in any category wins the Trophy.

4 LAPS COMPLETED

If any vehicles have completed the same number of laps at the fall of the chequered flag, the finishing position will be determined by which vehicle crossed the finish line first.

5 FLAG SIGNALS

5.1 Blue and White striped – Vehicle/s close behind you. Move left to allow overtaking.

5.2 Yellow – Danger or track obstruction in this area of the track. No overtaking when a yellow flag is displayed. Pass the point of danger with care, then continue racing.

5.3 Red – Extreme danger. All vehicles come to an immediate stop. Follow the directions of the Race Director and Flag Marshals.

5.4 Black – Waved at your vehicle. Stop in the pits on the next lap. Pit marshals will notify you of your offence and penalty.

5.5 Green – The track is clear for racing to continue. This flag is usually shown at pit exit.

3.2: TRACK CONDUCT

1 SLOW VEHICLES KEEP LEFT

Vehicles must keep to the left of the track, or outside of the track unless overtaking another

vehicle. Slower vehicles must not deliberately block faster vehicles.

2 OVERTAKING

Vehicles should aim to overtake to the right of the vehicle being overtaken in most circumstances. Riders must check their mirrors before overtaking. It is the responsibility of the overtaking vehicle to ensure that the overtaking move is carried out without endangering other competitors. Where the track corners to the right overtaking may occur on either side with care. Where the track is narrowed, care must be taken to be no more than 2 abreast. This may mean being momentarily patient if you are a faster vehicle overtaking two slower vehicles.

3 CLEARANCE

An overtaking vehicle must ensure a clearance of at least 2 metres before crossing in front of the slower vehicle. Cutting in or leaving insufficient clearance is not allowed.

4 SLIPSTREAMING

Slipstreaming closer than 1 metre is not allowed. To ensure safety is not compromised, riders must maintain a gap of at least 1 metre between vehicles at all times.

5 SAFETY CAR WITHOUT LIGHTS, FLAG OR SIGN

If the safety car is on the course, but is not showing flashing lights, yellow flag or 'Safety Car' sign, vehicles are free to overtake and race normally.

6 SAFETY CAR WITH LIGHTS, FLAG OR SIGN

If the safety car is on the track with flashing hazard lights, a yellow flag or 'Safety Car' sign shown, all vehicles must assume single file behind the safety car. No overtaking is allowed on any part of the course. The safety car will be positioned in front of the current road leader. Penalty stop for overtaking under a yellowflag or safety car will be applied without warning.

7 PITTING DURING A SAFETY CAR

During safety car deployment, vehicles may enter pit lane. However, as a safety precaution, vehicles will only be allowed to exit pit lane and join the end of the queue as the field is passing by. If the field is out of sight, pitted vehicles will be held for another lap.

8 INCAPACITATED DRIVERS

Incapacitated drivers may receive assistance and medical attention wherever necessary, from flag marshals or any other persons, without jeopardising their team.

9 RIGHT OF WAY

Competing vehicles have right of way over disabled vehicles.

10 DIRECTION OF TRAVEL

Under no circumstances is a vehicle to be driven or pushed on the track in the opposite direction to racing.

11 DEVICES

Musical devices, ear pieces or plugs, on board music etc inhibit hearing of warning devices and must not be worn.

12 Safety apparel

All vehicle occupants shall wear a correctly adjusted seatbelt or harness when on the track during practice and the event. Helmets, gloves and safety glasses shall be worn in accordance with the vehicle specifications.

3.3 PIT PROCEDURES

1 PIT LANE

The Pit Lane is a divided area where each team will be allocated a 3m frontage.

2 PIT BAY

The Pit Bay is the section of roadway in front of your allocated pit area. A maximum of four people, in addition to the incoming and outgoing riders, shall attend a vehicle in the pit bay.

3 TEAM SUPPORT AREA

The Team support area is the section behind the pit bay. 1 - 3mx3m awning for each team may be erected in front of the concrete wall. More may be erected behind, or you may arrange to share with another team. Teams may erect a team or school banner in their team support area. No cooking is permitted in this area. Pit areas are allocated by alphabetical order except where special requests are made to the race director.

4 SPEED IN PITS

The Pit lane speed will be restricted to 10 km/hr. Speed Guns may be used to check vehicle speed and penalties may apply.

5 DIRECTION OF TRAVEL IN PITS

Under no circumstances shall a vehicle enter or exit the pits via the pit exit in any way other than the through the designated entry and exits.

6 DRIVER CHANGEOVER

With the exception of incapacitated riders, all rider changes shall occur in the designated pit bay. Driver changeovers happening outside pit lane will incur a timed penalty.

7 STOPPING IN PITS

Vehicles shall come to a halt in the pit bay under the effect of the vehicle's own braking system. Stopping with the assistance of others is not permitted. Vehicles shall be stationary prior to unfastening seatbelts. Offending vehicles may be asked to demonstrate effective braking.

8 RIDER REFRESHMENT

Rider food and drink replenishment shall only take place when the vehicle is stationary in the pit bay. Exceptions to this include drinking from a water bottle or other water supply.

9 STATIONARY VEHICLES

Stationary vehicles shall give way to moving vehicles.

10 VEHICLES LEAVING THE PITS

Vehicles leaving a team's pit bay must give way to vehicles in the pit lane if there is a risk of collision or contact. The vehicle already in the pit lane has right of way.

11 REPAIRS

Some limited workshop facilities may be provided; however, teams should bring their own tools and material necessary for any repairs. Minor maintenance and running repairs may be carried out in the pit bay and team support area. Minimal workshop facilities will be available at the track on the day. Major repairs carried out during the event must be approved by race officials prior to the

vehicle rejoining the event.

12 REMOVAL OF COMPONENTS

If any component or any part of the structure of the vehicle is removed during the race, race officials must certify that the vehicle continues to comply with race rules before it will be permitted to continue racing.

13 SAFETY

A Marshal will be placed at the pit exit checking safety equipment including helmet, gloves, glasses and check working horns. Vehicles will be required to sound horn and may asked to stop if safety equipment is not present and working.

SECTION 4: GENERAL INSTRUCTIONS

PIT SITES

You need to provide your pit area shade shelter or tents. Pit site will be allocated to you prior to the event. Each team is provided with an area adjoining the track on the main straight for camping and erecting shade / seating area for additional spectating.

WARM-UP BIKES

Bicycles should not be brought to the event (stationary warm-up bikes are allowed).

FACILITIES

Toilet facilities are provided. Please ensure there is adequate supervision of team members. Shower facilities will also be available.

SECURITY

Teams are reminded that they are responsible for the security of their own equipment, vehicles and personal belongings.

ACCOMMODATION

Teams may camp at the venue. Tents and bedding would need to be provided by you the school. If you plan on cooking, please only use gas as electricity is in short supply. General site lighting will be provided by way of the playing field lights. Power for the purpose of charging personal equipment (eg phones) will be available at the clearly marked charging station / gazebo.

CATERING

Local sporting clubs / service clubs will provide catering packages. More information on menu options and pricing will be available closer to the event.

EMERGENCY RESPONSE PROCEDURES

Each Team Manager should brief all team members regarding the emergency response

procedures, and be aware of the designated assembly area. This will be pointed out at briefing

EVACUATION SIREN

(One continuous high-pitched signal from siren)

EVACUATE

Evacuate the area following instructions from Officials. Move directly to the assembly area as directed by Officials and wait for instructions. Evacuate people, NOT property.

APPENDIX 1:

COMPETITORS HEALTH AND SAFETY INFORMATION

Prevention of Injury

Common injuries to expect while competing are dehydration, cuts and abrasions, fatigue, heat exhaustion, muscle cramps and strains.

Muscle Cramps and Strains

Before commencing every riding stint, make sure you warm up your muscles by doing some stretching for at least 10 minutes before taking over.

Dehydration and Heat Exhaustion

Wear a hat, stay in a shady area while not competing and ensure you use plenty of sunscreen. Drink plenty of fluids both during your ride and when you are resting. Your body uses water and salts faster when exercising than it does normally; therefore you need to replace these fluids. Symptoms include cramps, exhaustion and headaches. Eat correctly and regularly, avoiding foods that are high in fats, e.g. chips, pies etc.

Fatigue

Get as much rest as you can, and sleep well beforehand. Avoid any unnecessary exercise.

Talk to us!

First Aid personnel will be on site during the entire event, location at the officials tent. If you require first aid attention, members can be contacted by either: visiting the tent or via track marshals. First Aid personnel will respond to any incident so please don't hesitate to ask for assistance.

APPENDIX 2: HPV SPECIFICATIONS

1 CONFIGURATION

1 CONFIGURATION

1.1 INTENT The human powered vehicle category is intended as an experiment in personal mobility. The objective is to build an efficient and stable machine powered entirely by human effort.

1.2 SEATING CAPACITY The vehicle shall carry one rider (or two riders in a tandem).

1.3 RIDING POSITION The rider must not be placed in a potentially hazardous position in the event of a collision or rollover. The riding position must be recumbent, i.e., reclined seat position with feet to the front. The rear rider in a tandem may face either way.

2 DESIGN AND MATERIALS

2.1 The design shall provide protection for the rider in the event of a collision or rollover and shall be free of protrusions or other features capable of causing interference or injury to competitors or spectators.

2.2 The choice of design and construction materials is free, including bicycle chains, sprockets, brakes wheels and other components. The use of Go-Kart frames, motorcycle frames and bicycle forks and frames is not permitted. However, bicycle centre brackets, head stems and wheel dropouts are allowed, provided the length of adjacent original frame tubing does not exceed 30mm.

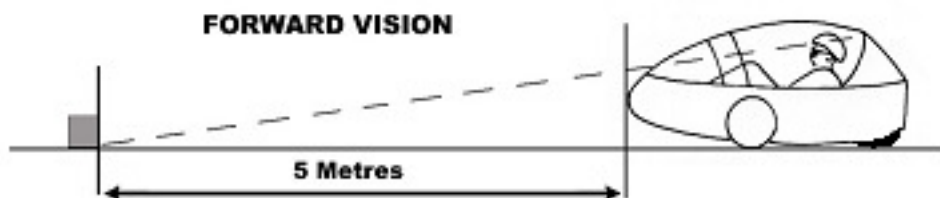
2.3 Body work and canopies must be inherently safe and maintained in a safe condition at all times. Bodywork shall be capable of being opened and/or removed:

- (a) from inside the vehicle without external assistance,
- (b) from outside the vehicle independently of the rider in an emergency.
- (c) labels comprising yellow 50mm equilateral triangles will be fitted to indicate the points at which the bodywork can be opened to access the rider in an emergency

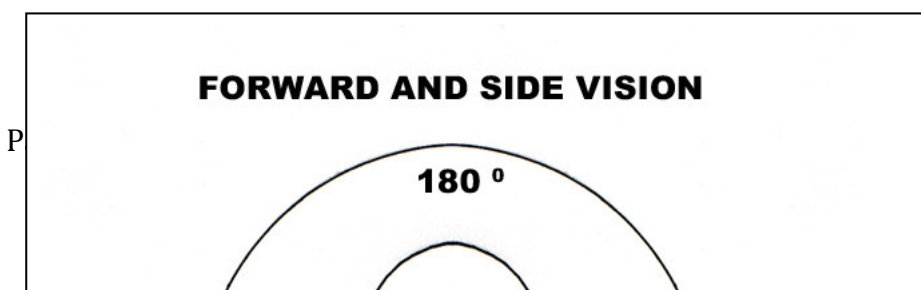
2.4 Rider vision must not be impaired by enclosed bodywork

2.5 Riders seated in the normal riding position must be able to sight an object on the road 5 metres in front of the vehicle.

2.6 Any reference in these rules to 'the rider' shall imply reference to both riders in a tandem vehicle.



Riders should have at least 210 degrees range of vision. In combination with mirrors, riders must have a full range of vision from inside any canopy or bodywork. The intent of this clause is that a rider is able to turn their head to visually check for other vehicles before changing their position on the road. See-through signage which impairs the range of vision is not permitted.



3 CONFIGURATION AND DIMENSIONS

Each vehicle shall comply with the following dimensional requirements.
Each vehicle must have three or more load bearing wheels, all of which must maintain contact with the road during normal operation.

Maximum Length

- *3000mm for tandems
- 2700mm

Maximum Width

- 1100mm

Maximum Height

- 1200mm

Minimum Wheelbase

- 1000mm Longitudinal distance between axles at tyre contact points.

Minimum Track

- 600mm Centre to centre of tyres on ground.

Turning circle

- 10 metres diameter maximum in either direction

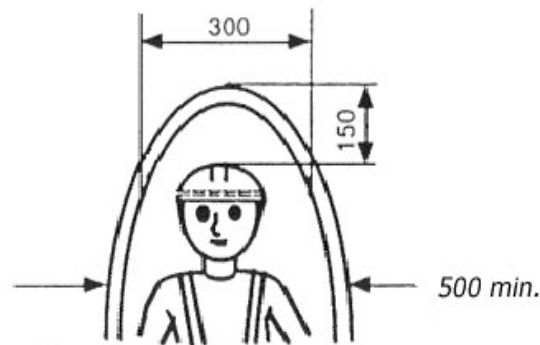
4 OCCUPANT PROTECTION

4.1 Roll over protection: A roll bar must be integral with the vehicle frame and must be rigidly and robustly constructed to retain its integrity during rollover. The structure must include longitudinal bracing to a main chassis member, to help prevent breakage or deformation during roll-over. Tee-bar style protection is no longer permitted.

4.1.1 With the tallest rider in normal riding position, in both faired and unfaired vehicles, the roll over protection shall conform to the following:

- a) height from top of helmet to top of bar: 150mm min.
- b) width 150mm down from top, measured inside bar: 300mm min.
- c) width of chassis or roll bar, within 200mm of rider's shoulder: 500mm min.

d) A string line from the top of the roll bar to the highest point on the chassis at the front of the vehicle must clear every rider's helmet and knees.



Such structures and their bracing may be detachable for transport purposes, provided that appropriate attachment methods are used e.g bolts and nuts. (pins or clips are not acceptable)

4.1.2 For fully faired bikes where the cover is flexible, the above rule 4.1.1 will apply.

4.1.3 For fully faired bikes where the cover has a rigid structure with sufficient strengthening to protect the rider, the roll-over protection shall conform to the following:

- a) The structure of the hard cover must be sufficiently robust to protect the rider.
- b) 20mm thick open cell foam, with a checking hole, must be fixed to the area where the rider's helmet may make contact with the cover.
- c) There must be sufficient head room to allow the riders to turn their helmeted head to conform with rule 2.6 regarding vision.
- d) An Air gap exists between the rider's helmet and foam. Riders observed to have their helmet compressing the overhead foam will not be allowed to continue riding.
- e) An external rollbar may also be fitted if you want but not compulsory.

4.2 Side impact protection: The vehicle design must include side impact protection for the rider, in the form of structurally supported sheeting (e.g., corflute, fibreglass, sheetmetal, plywood etc). The sheeting should shield the area between the rider's hip and shoulder from contact with another vehicle.

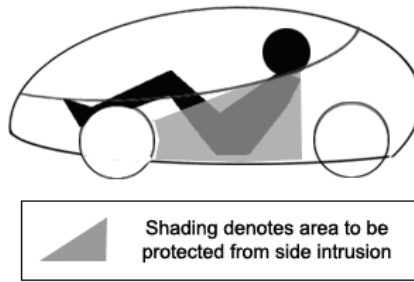
4.3 Seat belt: The vehicle shall be fitted with a (minimum) four-point automotive type seat belt utilising a standard automotive type buckle. Damaged belting, modified belts (i.e. shortened, altered or repaired), Inertia reel fittings, Velcro fastening and plastic buckles are not acceptable. Second-hand belts that meet the requirements of this section and that are free of visible damage are acceptable.

4.3.1 The seat belt shall be securely mounted to the frame or seat, such that the rider is restrained in the vehicle if roll over occurs.

4.3.2 Seat belts should be located so they can be worn across the chest, shoulders and low across the front of the pelvis. Wearing the lap section of the belt across the abdominal area must be avoided (Australian Design Rules 4/01).

4.3.3 Seat belts must be adjustable to fit all individual team members. Seat belts should be adjusted as firmly as possible for each rider.

SIDE IMPACT PROTECTION



4.4 Shielding of drive components

4.4.1 All drive components shall be fully shielded to prevent accidental contact with rider or clothing. Shielding must cover the top and sides of the chain.

4.4.2 The use of tubing and chain-ring side-plates to enclose the chain is permitted, provided that any gaps in the shielding are not greater than 5 mm.

4.5 Forward protection

4.5.1 The design must include a substantial forward protection bar, minimum 300mm wide, to prevent drive components such as chains, chain rings and riders feet from coming into contact with other vehicles. Tandem riders facing backwards should be similarly protected at the rear.

4.5.2 Bodywork or fairings with reinforcing shall be deemed to be sufficient protection. However, if such bodywork is damaged or removed during the race, the vehicle must still comply with rules 4.3 (side impact) and 4.12 (forward protection).

4.6 Safety equipment

4.6.1 Vehicles must be fitted with clipless pedals or toe straps to help prevent feet from coming into contact with the ground while riding.

4.6.2 A properly fitted bicycle helmet (AS approved), gloves and covered shoes must be worn when riding.

4.6.3 Shatterproof sunglasses or safety glasses must be worn when riding. Vehicles with fully enclosed fairings are exempt, unless the windscreen section has been removed.

4.6.4 Vehicles must be fitted with an under-tray or floor panel which prevents the rider's feet from contacting the ground causing them to be drawn back under the vehicle while moving. Pedal toe clips, elastic straps or cleats (pedal to shoe locking devices) do not fulfil the requirement of this clause. (Corflute, fibreglass, sheetmetal, plywood etc, would be considered suitable materials).

4.4.5 Safety equipment must be displayed to the pit marshal as you exit the pits. If equipment is missing then the vehicle **DOES NOT LEAVE THE PITS**.

5 STEERING

5.1 The steering mechanism should provide continuous positive control without the need for regular adjustment. Rope or wire systems are not permitted.

5.2 Steering linkages shall operate freely from lock to lock without binding or fouling and positive stops shall prevent any contact with rider, chassis or bodywork.

6 BRAKES

6.1 All wheels in contact with the road must have a braking capability.

6.2 The vehicle shall be fitted with a minimum of two independent braking systems.

6.3 Brakes on the same axle line (e.g. both front wheels) must operate via a single control, so that directional stability of the vehicle is not affected.

6.4 The braking system shall remain effective at all times during practice and racing.

7 LIGHTING

Not applicable as all practice and racing will be during daylight hours.

8 MIRRORS

The vehicle shall be fitted with two, securely mounted, flat or mildly convex mirrors, positioned so that the rider is afforded a clear view to the rear. Dia. 5cm or 2" minimum.

GLASS MIRRORS WILL NOT BE PERMITTED.

9 OTHER DEVICES

9.1 An audible electrical warning device shall be operable from the normal riding position and must be activated during overtaking. The device shall not impair rider control in its mounting or use and must be clearly audible at a distance of 10 metres. Such devices shall not emit inappropriate or offensive sounds.

9.2 It is highly recommended that each vehicle be equipped with a speedometer to monitor speed in the pit areas.

9.3 Other equipment e.g. drink bottles, shall be securely mounted, and should not impair rider control during use.

9.4 Mounting brackets for timing devices will be supplied at the event. The brackets may be attached using zip-ties.

10 VEHICLE IDENTIFICATION

10.1 Each vehicle shall have three number panels (size A4 landscape), one clearly visible at the front and one each side at the rear.

10.2 Numbers and backgrounds will be supplied by the organisers at registration.

10.3 Panels will be coloured: Boys – White, Girls – Pink, Mixed – Yellow.

10.4 Teams are encouraged to display their school name on the vehicle.