



AUSTRALIAN AUTO-SPORT ALLIANCE

# Off Road Racing Regulations

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(AASA)

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# 1

## General Requirements

- GRO

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# 1 General requirements - GRO

The following Regulations are adjunct to the AASA General Requirements for Vehicles (GRA). They list additional requirements beyond the GRA that are specific to vehicles competing in Off Road Racing events. Where an item shown on an Individual Recognition Document (IRD) issued by the AASA for a specific vehicle is in conflict with either the GRA or GRO, then that specific IRD specification will take priority.

- 1.1. Each vehicle must be equipped with a firewall that effectively shields the occupants from hazards associated with the derangement or malfunction of the engine and gearbox. A water-cooling radiator mounted behind and above the level of the driver's shoulders will be regarded as contributing to an effective shield.
- 1.2. Each vehicle, other than those retaining a series production floor pan, must be equipped with bodywork which prevents any "line of sight" entry of foreign matter into the habitacle up to approximately the level of the driver's shoulder. For panels fitted to the floor of the habitacle, the material required shall be either mild steel of minimum thickness 1.6mm or aluminium alloy of minimum thickness 2.0mm. Attention should be paid to the strength and impact resistance of the material used for the remaining bodywork.
- 1.3. Each steering column system between the steering wheel and steering rack/box must incorporate two flexible couplings and be offset in a manner that permits the column to collapse in the event of the rearwards displacement of the steering rack/box. Vehicles retaining a series production bodyshell and associated steering column in compliance with ADR10A/ADR10B are deemed to comply with this requirement.
- 1.4. Where the plane of the engine's flywheel intersects any part of the occupant's bodies, a scatter shield of 6mm mild steel or aluminium alloy (5083 or similar) must be fitted. The scatter shield must be of sufficient length and width to prevent any "line of sight" projectile contact from a deranged clutch/flywheel with the occupants. As an alternative, the use of a bellhousing to SFI 6.1 is permitted. This requirement shall not apply where the vehicle retains an unmodified series production floor pan/firewall.
- 1.5. **Tail shaft**
  - 1.5.1. Where the vehicle is fitted with a longitudinal driveshaft/tail shaft, it must be effectively prevented from striking the ground in the event of a derangement of any flexible coupling mechanism.
  - 1.5.2. Each tail shaft/driveshaft/chain drive passing through the habitacle must be contained within a casing of mild steel of minimum thickness 1.6mm or aluminium alloy of minimum thickness 2.0mm.
  - 1.5.3. Any chain drive assembly used to transmit power to the wheels must be effectively guarded to prevent the entrapment of foreign objects.
- 1.6. Where no structural bodywork exists in the region between the front and rear wheels, a protection or "nerf" bar must be added to minimise the likelihood of wheel interlock. The Nerf bar shall be predominately horizontal and constructed of a single hoop of steel tube of minimum dimensions 38mm diameter and wall thickness 2.5mm. The nerf bar must extend laterally at the rear to a vertical plane through the front and rear wheel hubs on the relevant side. It must be mounted with the fore and aft positions being at least 800mm apart and have a triangulating brace at the lateral extremity that extends to the chassis at a point in between but not collinear with the other two mounts. At the rear the maximum distance between the nerf bar and the leading edge of the rear tyre is 250mm. The nerf bar may be removable, but the mountings must be at least as strong as the bar itself.



## 1.7. Fuel Tanks

- 1.7.1. Fuel tank(s) must be contained within the structural profile of the vehicle when viewed from above. The structural profile is the main chassis/spaceframe of the vehicle, less any hanging panels. Any retained bodyshell components from a series production vehicle shall contribute to the structural profile, as shall any nerf bar fitted between the wheels.
  - 1.7.2. When mounted at the rear of the vehicle, the fuel tank must be protected to the rear and underneath by a steel tube structure of minimum dimensions 38mm diameter and 2.5mm wall thickness.
  - 1.7.3. The fuel tank must be isolated in such a manner as to prevent any “line of sight” entry of fuel into the habitacle should a leak occur in any part of the fuel tank.
  - 1.7.4. Unless a retained series production component, the fuel cap of each fuel tank must be a fully sealed type.
  - 1.7.5. Each fuel tank must be vented externally to the habitacle. It is strongly advised that a roll-over check valve be used in each vent line. Where a roll-over valve check valve is not used, the vent pipe must be attached at the top of the tank in one corner and extend vertically to at least the same height above the tank as the tank is deep at its maximum point. It must then cross to the opposite side of the tank and extend down to a point at least 150mm below the lowest part of the tank.
  - 1.7.6. Each fuel tank filler including any filler cap/ neck / lines must be located within the structure of the immediate framework, chassis or safety cage and all connections must be barbed or bulbed. The filler is defined as being the means used to connect the fuel tank to the fuel filling location
- 1.8. Each vehicle shall be fitted with a means of travelling in a reverse direction without external assistance.
- 1.9. Each vehicle shall be provided with two rear vision mirrors, each with a reflective surface area of at least 50cm<sup>2</sup>. The mirrors shall be arranged so that the driver can see an object placed on the ground a distance 15m directly behind the vehicle in at least one mirror.
- 1.10. Each vehicle shall be fitted with two towing points; one ahead of the front axle and one to the rear of the rear axle. These shall be of sufficient strength to permit the movement of the vehicle with its wheels locked, and be clearly marked in bright red. If they take the form of an eye it must be capable of accepting the insertion of a 40mm diameter pin.

## 1.11. Safety Cage Structure

- 1.11.1. For vehicles that utilise a retained series production bodyshell, a safety cage to AASA Class 2 or Class 3 specification must be added. The fitment of a second side anti-intrusion bar is strongly recommended. It is permitted to add up to two bars into the “windscreen” area provided that they don’t form a cross at any point, nor unduly impede the driver’s vision.
- 1.11.2. For vehicles that utilise a spaceframe structure, it is possible to either:
  - Add a safety cage structure in compliance with AASA Class 2 or Class 3, with the main hoop and front legs extending to floor level; or
  - Incorporate a safety cage into the spaceframe structure. In this case, the complete spaceframe must be acknowledged by the manufacturer as being suitable for the purpose of Off Road Racing competition. Refer to the AASA Spaceframe vehicle requirement for further information (Note: Not Yet finalised as of 30/01/2017).

## 1.12. Windows



- 1.12.1. Each windscreen fitted to the habitacle shall be made from laminated glass or polycarbonate (Note: Perspex® is specifically not permitted).
- 1.12.2. Where the driver must look through a windscreen, an effective wiper, and washer system, must be fitted to the area ahead of the driver.

1.13. Each rear hinged swinging panel must be equipped with two fastening mechanisms that act simultaneously to hold the panel closed under all reasonably foreseeable operating conditions.

1.14. Each vehicle must be fitted with at least one hand held type fire extinguisher, with the total mass of extinguishant not less than 1.80kg. Event Regulations may require carriage of additional extinguishers in high fire risk periods and/or locations.

### **1.15. Seating**

1.15.1. Each occupant must be provided with a seat capable of supporting and restraining the torso and of sufficient size to permit the occupant to sit fully into the seat.

**1.15.2. The minimum width of the seat at each of the hip and shoulder is 350mm**

1.15.3. The minimum width of the space available for each occupant's feet is 250mm, measured at the pedals or footboard as appropriate and perpendicular to the vehicle's longitudinal centreline.

1.15.4. Where no headrest is incorporated into the seat, a separate headrest must be provided to support the occupants head against a rearwards impact. The headrest must be constructed of a flat plate of steel at least 2mm in thickness and an area of at least 225cm<sup>2</sup> with no projections on its surface. It shall be covered with energy absorbing padding to SFI 45.2 or equivalent at least 25mm thick and must be within 50mm of the occupant's helmet when the occupant is seated normally.

1.15.5. The headrest, whether incorporated into the seat or as a standalone item, must extend to at least half the height of the helmet.

### **1.16. Roof**

1.16.1. There shall be a minimum clearance of 50mm between the roof and the occupant's helmets.

1.16.2. Vehicles that do not use the retained roof panel of a series production bodyshell must be equipped with roof plate(s).

1.16.3. Each roof plate shall be constructed of either:

- Aluminium alloy (5083 or similar) of minimum thickness 2.6mm; or
- Mild steel of minimum thickness 1.2mm

1.16.4. Each roof plate must, in combination or individually extend the full width of the space available between the inner edges of the upper longitudinal safety cage or chassis members.

1.16.5. When viewed from above, each roof plate must be at least 600mm in length when measured parallel to the vehicle's longitudinal centreline, of which at least 300mm must be ahead of the upper edge of the eye opening of the occupant's helmets.

1.16.6. Each roof plate may be fixed or hinged to the vehicle's structure.

If fixed the plate(s) shall be attached by either:



- Stitch welding (minimum 30mm per weld spaced no further than 300mm apart) to the space frame or safety cage structure, or
- Attachment by fasteners to tabs welded to the space frame or safety cage structure. In this case the fasteners shall be bolts of 6mm minimum diameter or quarter turn fasteners of minimum diameter 9.5mm, each at intervals of no more than 300mm.

If hinged:

- The roof plate shall be attached to a continuous “piano” hinge that is itself attached to a tab(s) welded to the front lateral member or front hoop of the space frame or safety cage structure.
- The hinge must be of length sufficient to extend to within 20mm of the longitudinal tubes of the frame.
- Each hinge shall be made from steel, of width 50mm and with a pin of not less than 2.5mm.
- The rivets fastening the hinges shall be a minimum of 3mm in diameter and be spaced no further than 30mm apart.
- Hinges shall be attached to the roof and tab using rivets of corrosion resistant material (Monel® or similar).
- A hinged roof must overlap and be supported at the sides and rear edge by the other members of the spaceframe or safety cage that make up the roof opening.
- Each hinged roof must be held closed by two self-locking or elastic type latch mechanisms, each free from sharp edges and projections.

#### **1.17. Brakes**

- 1.17.1. Each vehicle is to be equipped with a foot controlled primary braking system operating simultaneously on each wheel.
- 1.17.2. Each vehicle must be fitted with a secondary braking system capable of operating on at least two wheels in the event of a failure of the primary braking system.

#### **1.18. Safety**

- 1.18.1. Each vehicle shall be equipped with side window nets, or wrist restraints, capable of restraining each occupant’s limbs within the habitacle.
- 1.18.2. Each vehicle shall be equipped with a safety harness for each occupant with at least 5 straps in contact with each occupant’s body. Harnesses shall be to the SFI 16.1 standard, or internationally recognised equivalent.

#### **1.19. Emergency Equipment**

- 1.19.1. Each vehicle shall carry the following equipment
  - A reflective warning triangle of side length 200mm
  - A water resistant OK/SOS sign of area not less than 580cm<sup>2</sup>.
  - A proprietary vehicle tow rope of at least 5m length



- A weatherproof Off Road First Aid kit, as supplied by St John Ambulance Australia, or equivalent.
- A proprietary device for each occupant designed to cut safety harnesses in the event of an incident. (Must have a minimum of two (2) working seat belt cutters located in a position that is highly visible and easily accessible by occupants (whilst belted in and wearing gloves) and any person outside the vehicle. They must also be in a position where they are unlikely to be dislodged in the event of an accident.

1.19.2. Emergency equipment shall be securely mounted and reasonably protected from exposure to dust and water.

## **1.20. Electrical System**

1.20.1. The battery shall be securely mounted and protected in a manner that prevents short circuits and the spill of liquid onto the occupants.

1.20.2. The battery's location shall be marked by a blue triangle of side length 150mm.

1.20.3. Each vehicle shall be equipped with a master isolation switch configured so as to remove electrical power from all parts of the system, and which will stop a running engine.

1.20.4. The isolation switch, and any remote point, must be denoted by a red spark in a white edged blue triangle of side length 150mm.

1.20.5. The isolation switch shall be mounted so as to be accessible to each occupant

1.20.6. Where the switch is not readily accessible to an external person, a remote means of operation must be provided near the base of the right A-Pillar.

## **1.21. Lighting**

1.21.1. At least one rear facing red stoplight, controlled solely by the application of the brakes. It shall have an area of not less than 60cm<sup>2</sup> and a light intensity equivalent to a 12V, 21W incandescent filament globe when viewed at any angle up to 45 degrees either side of the longitudinal axis of the vehicle.

1.21.2. At least one rear facing amber dust light/clearance light, configured to be light whenever the main isolation switch is on. It shall have an area of not less than 60cm<sup>2</sup> and a light intensity equivalent to a 12V, 18W incandescent filament globe when viewed at any angle up to 45 degrees either side of the longitudinal axis of the vehicle.

1.21.3. At least one rear facing blue strobing/flashing safety LED light, which must be illuminated whenever the main isolation switch is on. It shall have an area of not less than 60cm<sup>2</sup> combined. Must be visible when viewed at any angle up to 45 degrees either side of the longitudinal axis of the vehicle. Effective 1st January 2020.

1.21.4. At least two separate forward-facing white lights, configured so as to be switched on by the occupants. Each light shall have a light intensity equivalent to a 12V, 55W incandescent filament globe when viewed directly ahead of the vehicle.

1.21.5. Each vehicle shall be equipped with an audible warning device capable of alerting other vehicles that they may be about to be passed. The warning device shall be capable of generating a noise in excess of 95dB at a distance of 5m ahead of the vehicle.





## 1.22. Wheels and Tyres

- 1.22.1. Wire spoke wheels are prohibited.
- 1.22.2. Wheels of rim width greater than 13" must be fitted with devices to mechanically lock the tyre to the rim.
- 1.22.3. Tyre valves must not project beyond the profile of the inflated tyre, and must be fitted with sealed metal valve caps.

## 1.23. Number Display

- 1.23.1. Each vehicle shall be identified by numbers of at least 3 digits, each at least 150mm in height. Unless otherwise specified in event regulations, the font shall be Arial Bold. *Ultimate class and national outright winner number plates are acceptable.*
- 1.23.2. Each vehicle shall be equipped with two number panels, each on a vertical plane.
- 1.23.3. Each number panel is to be coloured white and of sufficient length so as to permit a gap of at least 25mm between each numeral and its adjacent numerals and to each edge of the panel.
- 1.23.4. Each number panel is to be at least 200mm high and configured so as to permit a gap of at least 25mm between each numeral and the top/bottom of the panel.
- 1.23.5. One number panel shall be parallel to the longitudinal centreline of the vehicle, with its lowest edge not below the highest part of the vehicle's roof.
- 1.23.6. One number panel shall be mounted at the rear of the vehicle in such a location as to be visible from 30 degrees each side of the longitudinal centreline.
- 1.23.7. Event regulations may specify additional or alternative identification requirements.
- 1.23.8. *Front facing identification numbers are required and to be in day glow yellow with a minimum of 150mm in Arial Bold.*

## 1.24. Engine Capacity

- 1.24.1. Each petrol engine equipped with forced induction shall be regarded in all circumstances to have an effective capacity equal to the product of its swept volume and a factor of 1.70 (Note: 3.56 litres turbo petrol = 6 litres +1%)
- 1.24.2. Each petrol engine not equipped with forced induction (NA) shall be regarded in all circumstances to have an effective capacity of 7 Litres +1%.
- 1.24.3. Each diesel engine equipped with forced induction shall be regarded in all circumstances to have an effective capacity equal to the product of its swept volume and a factor of 1.33 (Note: 4.55 litres turbo diesel = 6 litres +1%)
- 1.24.4. Unless specified otherwise in Event or Specific Regulations, each engine shall be deemed to remain eligible within its nominal class provided its measured capacity, including equivalence factors, is not more than 1% above the nominal capacity limit.

## ~~1.25. Mirrors/Vision~~

- ~~1.25.1. A rear vision camera system may be used in place of rear vision mirrors.~~



# 2

## Specific Requirements for Groups



## 2 Specific Requirements for Groups

### 2.1. General

The present regulations relate primarily to the construction of new competition vehicles from the commencement of 2017.

AASA recognises that many vehicles have been in competition for many years, and during those years many changes have been made to the general and specific requirements. This means that technical regulations can become very complex as they have to make allowance for these pre-existing vehicles. Rather than try to cover each variation within the general technical regulations, the AASA uses an Individual Recognition Document to describe an existing vehicle. Provided it stays in compliance with the details in this document (4-5 pages with photos and some details) then it can continue to compete. This means that the Technical Regulations remain as simple as possible.

### 2.2. Off Road Competition Technical and Class Structure

#### 2.2.1. Buggies

These are typically spaceframe vehicles with rear or mid engines driving the rear wheels, with space for one or two occupants.

#### 2.2.2. Truggies

These are typically spaceframe vehicles with front engines driving the rear wheels, with space for one or two occupants.

#### 2.2.3. Production 2WD

These vehicles look like a production model and use 2WD.

#### 2.2.4. Production 4WD

These vehicles look like a production model and use 4WD.

#### 2.2.5. Personal Recreational Vehicles

These vehicles utilise the popular light RV models available in the general market. These can cater for one or two occupants and be either 2WD or 4WD.

##### (a) Modifications

For the production classes there are three levels of modification:

- i. Stock: catering for vehicles which retain most of the production body, suspension and powertrain components.
- ii. Power: catering for vehicles that retain the production basic shell but have freedom of suspension and powertrain.
- iii. Wild: catering for prototype vehicles with a production silhouette.



## **(b) Classes**

Organisers of Off Road events are encouraged to use the following class structure, but other Class structures may be permitted by the AASA upon request. Combination of classes will be permitted if insufficient entries are received.

### **UNLIMITED**

Unlimited Buggies and Truggies with one or two crew and engines (inclusive of any turbo/supercharging, rotary and/or diesel correction factors) not exceeding 6000cc.

### **CLASS 1**

Buggies and Truggies with one or two crew members and naturally aspirated engines with a swept volume not exceeding 3500c.

### **CLASS 2**

Buggies and Truggies with two crew members and an engine capacity (inclusive of any turbo/supercharging, rotary and/or diesel correction factors) not exceeding 1650cc (zero tolerance).

### **CLASS 3**

Buggies and Truggies with two crew members and with an engine capacity (inclusive of any turbo/supercharging, rotary and/or diesel correction factors) not exceeding 1330cc (zero tolerance).

### **CLASS 4**

This Class caters for vehicles with one or two crew members, complying with the Wild 2WD technical regulations and having an engine capacity (inclusive of any turbo/supercharging, rotary and/or diesel correction factors) not exceeding 6000cc.

### **CLASS 5**

This Class caters for vehicles with two crew members, complying with the Power 2WD technical regulations and having an engine capacity (inclusive of any turbo/supercharging, rotary and/or diesel correction factors) not exceeding 6000cc.

### **CLASS 6**

This Class caters for vehicles with two crew members, complying with the Super PRV technical regulations and having an engine capacity (inclusive of any turbo/supercharging, rotary and/or diesel correction factors) not less than 1201cc and not exceeding 2050cc (no tolerance).

### **CLASS 66**

This Class caters for vehicles with two crew members, complying with the Super PRV technical regulations and having a normally aspirated engine of swept volume not exceeding 1200cc (no tolerance).

### **CLASS 7**

This Class caters for vehicles with two crew members, complying with the Stock 4WD technical regulations and having an engine capacity (inclusive of any turbo/supercharging, rotary and/or diesel correction factors) of up to 6000cc.



## **CLASS 8**

This Class caters for vehicles with one or two crew members complying with the Super 4WD technical regulations and having an engine capacity (inclusive of any turbo/supercharging, rotary and/or diesel correction factors) of up to 6000cc.

## **CLASS 10**

Buggies, and Truggies otherwise in compliance with the Wild 2WD technical regulations, with one or two crew and naturally aspirated engines with a swept volume not exceeding 2500c (no tolerance).

## **CLASS 11**

1. This Group is for 2WD or 4WD vehicles with one or two crew and an NA engine capacity not exceeding 7000cc +1%.
2. Each petrol engine equipped with forced induction shall be regarded in all circumstances to have an effective capacity equal to the product of its swept volume and a factor of 1.70 (Note: 3.56 litres turbo petrol = 6 litres +1%).

The remainder of vehicle regulations will be referred back to Unlimited Class, Class 4, Class 5 and Class 8.

### **2.3. Buggies**

A Buggy is a competition vehicle designed primarily for Off Road competition, being in its nature a space frame chassis with a rear mounted engine driving the rear wheels only. Buggy frames must be acknowledged by the manufacturer as being suitable for the purpose of Off Road competition events, comply with AASA General Requirements, and comply with any such AASA Individual Recognition Document as is specified in the AASA Passport assigned to the vehicle. In the event of conflict, any specification in the AASA Recognition Document shall take priority over any General Requirement.

### **2.4. Truggies**

A Truggy is a competition vehicle designed primarily for Off Road competition, being in its nature a space frame chassis with a front mounted engine driving the rear wheels only. Truggy frames must be acknowledged by the manufacturer as being suitable for the purpose of Off Road competition events, comply with AASA General Requirements, and comply with any such AASA Individual Recognition Document as is specified in the AASA Passport assigned to the vehicle. In the event of conflict, any specification in the AASA Recognition Document shall take priority over any General Requirement.

### **2.5. 2WD Production Groups**

#### **2.5.1. General**

The following Production Groups are for vehicles that are recognisable as being representative of a series production model, whether in silhouette or based on production mechanical components.

#### **2.5.2. Wild 2WD**

This Group is for 2WD vehicles with one or two crew and an engine capacity (inclusive of any turbo/supercharging, rotary and/or diesel correction factors) not exceeding 6000cc.

1. The body must substantially resemble that of a production vehicle being either Category T (Touring Cars) or Category C (Light Commercial) as defined by the AASA, save that the use of chassis/cab vehicles without rear bodywork, and of tray-top vehicles, is prohibited.



2. The load bearing chassis/spaceframe is free, but must be acknowledged by the manufacturer as being suitable for the purpose of Off Road Competition. The spaceframe may incorporate a safety cell for the occupants or a separate safety cage complying with AASA requirements may be fitted.
3. The engine is free, subject to it being of not more than 6000cc capacity inclusive of any turbo/supercharging, rotary and/or diesel correction factors.
4. The location of the engine is free. No part of the cylinder block may extend across a vertical plane perpendicular to the longitudinal centreline of the through the middle of the wheelbase.
5. The transmission and final drive is free, save that a transaxle may only be used if a transaxle was used in the production vehicle represented (see 1.1)

### **2.5.3. Power 2WD**

This Group is for modified Series Production based 2WD vehicles with engines not exceeding 6000cc, inclusive of any turbo/supercharging, rotary and/or diesel correction factors.

1. The vehicle must be derived from a series production model being either Category T (Touring Cars) or Category C (Light Commercial) as defined by the AASA, save that the use of chassis/cab vehicles without rear bodywork, and of tray-top vehicles, is prohibited.
2. The basis of these Group Regulations is that all modifications to the original vehicle are permitted except for those prohibited/restricted in the following regulations.
3. The original silhouette of the coachwork of the vehicle, when viewed from the side and above, must be retained.
  - 3.1. This shall not apply to the areas ahead of and below the axis of the front wheel, and behind and below the axis of the rear wheels. In these areas material may be deleted only.
4. The bodyshell/monocoque, less all hanging and swinging panels must be unchanged in material. Any additions made to the bodyshell of the vehicle must respect this requirement.
5. A bull bar/brush guard not exceeding the width (at the front) of the bodywork above the front wheels may be fitted.
6. The radiator grille must remain unchanged in shape and must remain in its original location. Where the grill is incorporated into the front bumper fascia the complete fascia above a horizontal plane through the front wheel axes must be retained in shape.
7. One or more roof vents may be fitted, but they must be in the forward one-third of the roof, with their opens side facing forward, and their vertical opening not greater than 10cm.
8. Where the production vehicle is equipped with a chassis and/or sub-frames, these must be retained in their original location; and must remain unchanged in dimensions, plan view and silhouette.
9. The maximum permitted variation of the wheelbase from the manufacturer's specification is plus or minus 3%.
10. The complete wheels are free. They must be covered, as seen from above, by the bodywork, or flares firmly attached to the bodywork, for at least one third of the circumference of the wheel.
11. The original front door shells, hinges and latches must be retained, except that any anti intrusion bars and the window channels of the door above the lower level of the window aperture may be removed.



12. Each rear door opening must be closed by a panel of the same external shape as the removed door.
13. It must not be possible for any part of the occupant's bodies to pass between the anti-intrusion bars of the safety cage and the door outer skin.
14. Head and tail light assemblies must be retained in their original location and be operational.
15. The engine is free, subject to it being of not more than 6000cc capacity inclusive of any turbo/supercharging, rotary and/or diesel correction factors.
16. Notwithstanding 2.4 above, the firewall and floor pan may be modified to permit the engine to be moved into the habitacle. The engine must remain isolated from the habitacle by a cover made from the same material as the original firewall. Where the engine is moved from its original location a scattershield (see AASA General Requirements for Off Road) must be fitted to protect the occupants from projectiles resulting from the derangement of the clutch/flywheel assembly.
17. The location of the engine is free, save that it must remain in the same general location as the original vehicle. No part of the cylinder block may extend across a vertical plane perpendicular to the longitudinal centreline of the vehicle through the middle of the wheelbase.
18. The original engine/gearbox/final drive configuration, in relation to the body, must be retained.

## **2.6. 4WD Production Groups**

### **2.6.1. General**

The following Production Groups are for vehicles that are recognisable as being representative of a series production 4WD model, whether in silhouette or based on production mechanical components

### **2.6.2. Stock 4WD**

The vehicle must be derived from a series production 4WD model being either Category T (Touring Cars) or Category C (Light Commercial) as defined by the AASA, save that the use of chassis/cab vehicles without rear bodywork, and of tray-top vehicles, is prohibited.

1. To be eligible for this Group:
  - 1.1. The vehicle model must be a series production 4WD/AWD model with a Kerb Weight of less than 3 tonnes.\*
  - 1.2. Cab/Chassis vehicles must be fitted with "Utility" style rear bodywork. For the avoidance of doubt a tray fitted with demountable sides does not fulfil this requirement.
  - 1.3. At least 25 examples of the model must have been registered for unrestricted road use in Australia.\*
  - 1.4. The engine capacity of the unmodified vehicle may not exceed 6000cc, inclusive of any turbo/supercharging, rotary and/or diesel correction factors.\*
2. All modifications are forbidden unless expressly authorised by these Specific Regulations, or required by the AASA General Regulations for Off Road.
3. Coachwork below a plane through the foremost point of the bumper/front fascia and through the front wheel axis may be removed.
4. Coachwork below a plane through the rearmost point of the bumper/rear fascia and through the rear wheel axis may be removed.



5. The front bumper bar/front fascia may be replaced with a bull bar or brush guard.
6. Wheel arch flares/extensions may be fitted to the production guards.
7. Interior trim, seats and floor coverings may be removed or replaced freely. If removed, the front door trims must be replaced by flat panels of adequate strength to prevent any part of the occupant's bodies from pass between the anti-intrusion bars of the safety cage and the door outer skin. Sound deadening and sealing material may be removed from the floorpan and firewall. Instruments may be added. The steering wheel is free. Ancillary devices, the sole purpose of which is to improve comfort and ease of use, are permitted to be added freely within the habitacle.
8. Material may be added to the chassis/bodyshell for strengthening purposes provided the material added remains in contact with the underlying material. Mountings points for additional suspension dampers and bump stops may be added.
9. The cylinder bore may be increased to accommodate an oversize piston of a size permitted by the manufacturer. The block may be decked.
10. Pistons, gudgeon pins, retainers and rings are free.
11. The crankshaft and connecting rods may be chemically and/or heat treated, and balanced by the removal of metal only.
12. The flywheel is free provided the mass of the replacement is within  $\pm 5\%$  of that of the original component.
13. The removable part of the engine sump are free.
14. Oil coolers may be fitted freely, save that they must not be mounted within the habitacle. Oil filters may be replaced, added or relocated freely.
15. The carburettor(s) is/are free, provided there is no increase in the total number of venturis. Throttle linkages may be modified and adaptor plates used to facilitate fitment of replacement carburettors.
16. The air cleaner and ducting upstream of the carburettor/throttle body is free.
17. The inlet manifold may be modified solely by means of the removal of material from the internal tracts
18. On vehicles originally fitted with fuel injection systems, the fuel Injectors and electronic/mechanical control systems are free provided that no modifications are made to the manifold. Throttle bodies, where demountable, are free as to their design but not their number.
19. Fuel pumps, lines and filters are free.
20. Anti-pollution equipment may be removed and resulting openings blocked off.
21. Engine coolant radiators and thermostats are free provided they mount in the same general location to the original fixtures. Cooling fans are free.
22. Ancillary belts and pulleys are free. For the avoidance of doubt camshaft drives are not regarded as ancillary.
23. Valves, valve springs, collets and retainers are free. Valve guides may be added or replaced provided they remain concentric with the original guides.
24. Camshaft(s) may be replaced by others with different lift/timing characteristics provided they are interchangeable with the original.





25. The exhaust system is free from the cylinder head ports.
26. Elastomeric engine mounts may be modified or replaced by interchangeable items.
27. The boost pressure of forced induction engines is free as are associated pressure control devices
28. Intercoolers may be replaced provided the replacement maintains the same operating principle and requires no modifications to the coachwork to enable fitment.
29. Gearbox mounts are free.
30. Clutch linings are free.
31. Gear and final drive ratios may be changed to other ratios provided optionally by the manufacturer, either for the Australian or international markets.
32. Automatic transmissions may be modified to the extent necessary to provide for direct driver selection of the gear.
33. Oil cooling systems may be added or replaced provided all components of the system are external to the habitacle.
34. The differential is free provided its fitment requires no modification to other components of the final drive assembly.
35. The suspension may be modified as provided for in the following:
  - 35.1. The suspension mounting points, spring mounts/seats and suspension components may be strengthened by the addition of material.
  - 35.2. Suspension springs are free, but not their number or type.
  - 35.3. The original suspension dampers may be replaced by others of free design.
  - 35.4. One additional suspension damper and requisite mounting points may be added to the suspension for each road wheel. At the top, this may be mounted to the chassis or bodywork, and may penetrate the inner skirt into the engine bay at the front. The original damper mount may be moved or modified to the extent required for fitment of the additional damper unit.
  - 35.5. Devices to limit suspension travel in either direction may be added. Modification of existing components is authorised to the extent required to permit their fitment. Hydraulic bump stops shall not be regarded as damping units for the purpose of 35.4
36. Fuel tanks may be added or replaced freely, subject to AASA General Requirements.
37. The complete wheels are free. They must be covered, as seen from above, by the bodywork, or flares firmly attached to the bodywork, for at least one third of the circumference of the wheel.
- 38. Brakes**
  - 38.1. Brake pads, linings, discs and drums are free
  - 38.2. Brake system components may be replaced by others from the same manufacturer provided the functional dimensions of the system are not increased.
  - 38.3. Handbrakes may be removed.



### **39. Safety Cage**

Each vehicle must be fitted with a Safety Cage that complies with AASA Class 2 requirements. Additional bracing is permitted in the front windscreen opening provided that the driver's vision is not unduly obscured and the bracing does not form a cross.

### **40. General**

- 40.1. Fasteners used throughout the vehicle are free provided they are of the same or higher rated grade.
- 40.2. Gaskets used throughout the vehicle are free
- 40.3. Bearings used throughout the vehicle are free provided they are of the same type and interchangeable with the original bearings.
- 40.4. All lines and hoses carrying fluid are free, as is their location and methods of attachment subject to AASA General Requirements.
- 40.5. The electrical system is free provided that the system retains the same nominal voltage and the type of any ignition system is unchanged.
- 40.6. Where marked with an asterisk (\*), the entrant is responsible for furnishing documentation as proof of compliance This may include supporting information from a relevant brochure, official documents issued by the manufacturer/importer/distributor, or such other evidence as may be required to the satisfaction of event officials or AASA.

### **Wild 4WD**

This Group is for 4WD vehicles with one or two crew and an engine capacity (inclusive of any turbo/supercharging, rotary and/or diesel correction factors) not exceeding 6000cc.

1. The body must substantially resemble that of a production vehicle being either Category T (Touring Cars) or Category C (Light Commercial) as defined by the AASA, save that the use of chassis/cab vehicles without rear bodywork, and of tray-top vehicles, is prohibited.
2. The load bearing chassis/spaceframe is free but must be acknowledged by the manufacturer as being suitable for the purpose of Off Road Competition.
3. The spaceframe may incorporate a safety cell for the occupants or a separate safety cage complying with AASA requirements may be fitted.
4. The complete wheel assemblies must be fully covered by the coachwork when viewed from above.
5. The engine is free, subject to it being of not more than 6000cc capacity inclusive of any turbo/supercharging, rotary and/or diesel correction factors.
6. The location of the engine is free. No part of the cylinder block may extend across a vertical plane perpendicular to the longitudinal centreline or through the middle of the wheelbase.
7. The transmission, transfer unit and final drive assemblies are free.

## **2.7. Personal Recreational Vehicles**

### **2.7.1. General**

This Group covers a range of series production light Off Road vehicles with one or two seats generally available to the public for use in off road recreational activities.



### 2.7.2. Super PRV

To be eligible for the SUPER PRV Group, vehicles must be of a model appearing in the list below and have an engine capacity (inclusive of any turbo/supercharging, rotary and/or diesel correction factors) not exceeding 2050cc capacity.

### 2.7.3. Approved Models

APPROVED LIST OF SUPER PRV MODELS		
Manufacturer	Model	Recognition Document
Polaris	RZR Models	TBC
	Commander	TBC
Can Am	Maverick	TBC
	Z6	TBC
CF Moto	Z6 Spec R	TBC
	Rhino	TBC
Yamaha	XYZ	TBC
Arctic Cat	Wild Cat 1000i H.O	TBC
BBM	1100 Cyclone	TBC

1. Each vehicle must remain unmodified unless expressly authorised by these Specific Regulations, or required by the AASA General Regulations for Off Road.
2. All OEM factory accessories available for an eligible model PRV from the manufacturer, with an OEM part number are eligible to be included with the vehicle listed above.
3. The coachwork may be modified by the addition of accessories (e.g. Windscreen) supplied by the manufacturer, or an aftermarket supplier where specifically produced for the model concerned\*.
4. Each side of the vehicle next to the occupants shall be fitted with a panel of sufficiently rigid material up to the height of the lower edge of the scuttle panel. This shall provide protection to the occupants from the ingress of material thrown from the wheels, and assist to restrain the occupants' limbs within the confines of the vehicle structure.
5. Seats may be replaced by others in compliance with AASA General Regulations.
6. The chassis of the vehicle may be strengthened by the addition of material, and by the fitment of a safety cage.
7. Where specified in event regulations, the manufacturer's upper structure may be removed to facilitate the fitment of a safety cage.
  - 7.1. Such a safety cage shall be to the same requirements as for a Buggy up to 800kg.



- 7.2. The safety cage shall incorporate a roof plate as per GRO requirements.
- 7.3. Where a cage is required two continuous door bars shall be added to each side of the vehicle. These shall be generally horizontal, with the upper bar as high as possible
- 7.4. The safety cage shall not unduly impede egress so that the occupants can exit the vehicle normally within 10 seconds.
8. Freedoms are extended to the engine/powertrain assembly in the following areas:
  - 8.1. The cooling system for engine and transmission fluids.
  - 8.2. The design and number of gearbox/transmission mounts
  - 8.3. The clutch assembly
  - 8.4. The ignition system for naturally aspirated engines
  - 8.5. For naturally aspirated engines, the induction and air cleaner assemblies upstream of the throttle body or carburettor systems.
  - 8.6. For forced induction engines, the induction and air cleaner assemblies upstream of the compressor housing inlet.
9. The suspension may be modified as follows:
  - 9.1. Dampers and their mounting points are free, save that no more than one damper unit may be used per road wheel assembly.
  - 9.2. Suspension components may be strengthened by the addition of material.
  - 9.3. Suspension arms are free provided wheelbase remains unchanged. Track width to be no more than 2000mm measured from outside to outside of tyres unless manufacturers wheel track is wider in standard or factory option configuration.
  - 9.4. Ball joints and elastomeric bushings are free.
  - 9.5. Suspension springs are free, but not their number or type.
  - 9.6. Sway bars and their mountings may be added or replaced.
  - 9.7. Devices to limit suspension droop may be added. Modification of existing components is authorised to the extent required to permit their fitment.
  - 9.8. Non-assisted steering systems may be replaced by power assisted systems
10. Fuel tanks may be replaced or relocated, but must comply with AASA General Requirements.
11. Wheels and tyres are free.
12. Brakes may be modified as follows:
  - 12.1. Brakes pads/linings are free
  - 12.2. Power assistance may be added
  - 12.3. A handbrake may be added provided it works simultaneously on both wheels of the same axle
  - 12.4. A mechanism to vary front to rear brake bias may be added



13. The battery, generator/alternator and wiring system is free provided the nominal system voltage is unchanged.
14. General
  - 14.1. Fasteners used throughout the vehicle are free provided they are of the same or higher rated grade.
  - 14.2. Gaskets used throughout the vehicle are free
  - 14.3. Bearings used throughout the vehicle are free provided they are of the same type and interchangeable with the original bearings.
  - 14.4. All lines and hoses carrying fluid are free, as is their location and methods of attachment subject to AASA General Requirements.
  - 14.5. Where marked with an asterisk (\*), the entrant is responsible for furnishing documentation as proof of compliance This may include supporting information from a relevant brochure, official documents issued by the manufacturer or importer/distributor, or such other evidence as may be required to the satisfaction of event officials or AASA.

## 2.8. Motorbuggies

### 2.8.1. General

This Group covers a range of light Off Road competition vehicles with one seat and powered by an engine derived from a production motorcycle. They are not eligible for competition in Off Road events in which vehicles from any Off Road Group other than Motorbuggies are eligible.

Motorbuggies are for use in races on unsealed tracks of generally less than 3km in length. The tracks may include jumps or other speed limiting sections. The circuit shall be designed to hold maximum vehicle speeds below 100km/h. Each track shall be licensed by the AASA.

### 2.8.2. Trophykarts

To be eligible for the TrophyKart Group, vehicles must be of a model appearing in the list below, or as specifically authorised in Event Regulations.

### 2.8.3. Approved Models

#### APPROVED LIST OF TROPHYKART MODELS

Manufacturer	Model	Recognition Document
	JR 1	TBC
	JR-2	TBC
	RS200	TBC
	RS400	TBC
	Mod Kart	TBC
Trophy Kart LLC.	TK600R	TBC



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AOK Pty Ltd

TBC

TBC

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Each vehicle must remain unmodified unless expressly authorised by Event Regulations, or required by the AASA General Regulations for Off Road GRO.

**2.8.4. Torc Buggies**

To be eligible for the TORC Buggy Group, vehicles must have an engine capacity of less than 1340cc, and comply AASA General Regulations for Off Road Racing.

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