

**Rules and Regulations**  
For 1/10 Scale  
Electric Off-Road & On-Road Cars

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## Vehicle Specifications

### 1. Off-Road Vehicles

#### 2WD Buggy, 4WD Buggy, & 2WD Truck

##### 1.1. Appearance

- 1.1.1. All Buggies & Trucks are to be a reasonable representation of an off-road or dirt track type vehicle.
- 1.1.2. Buggies must have racing buggy type bodies.
- 1.1.3. Trucks must have racing truck type bodies.
- 1.1.4. Open cockpit or roll cage type bodies must have a driver figure (head, arms & shoulders) of realistic appearance, colour and garb.
- 1.1.5. No Vehicle shall compete or practice on the track without a body or roll cage firmly affixed. If the body of the car becomes loose or fall off the Race Director may direct the driver of the vehicle to pull off the track, until the part is reattached.
- 1.1.6. Openings in the body for wing mounts, antennas, & cooling vents etc shall be kept to a minimum. No more than 6mm clearance is allowed. Specifically servos, receivers, speed controllers, batteries and servo savers must not protrude through the body shell.
- 1.1.7. All buggy and truck bodies must be painted. No clear lexan bodies allowed.

##### 1.2. Dimensions and Weight

- 1.2.1. 2WD & 4WD Buggy:
 

Max. Length:	457mm
Max. Width:	250mm
Max. Height:	203mm
Min. 2WD Weight:	1475g
Min. 4WD Weight:	1589g
- 1.2.2. 2WD Truck:
 

Max. Length:	457mm
Max. Width:	330mm
Wheelbase Range:	229mm to 292mm
Min. Weight:	1701g

##### 1.3. Wings

- 1.3.1. Buggies may have a maximum of two wings, one for the front and one for the rear.
- 1.3.2. Maximum size of wings:
 

Front	127mm x 63mm cord
Rear	177mm x 76mm cord
	<i>Maximum side dams sizes:</i>
Height	50mm
Length	100mm.
- 1.3.3. Trucks may have a rear spoiler fitted. The max. Chord of the spoiler is 60 mm and is measured from the wings width extremities and does not

include any portion of the main body of the Truck. No "Add-ons", Side dams, or wings allowed except if produced by the body manufacturer.

### 1.4. Wheels and Tyres

- 1.4.1. Tyres must be black except for sidewall detailing.
- 1.4.2. Spiked tyres are allowed but spikes must be of a pliable material. No form of metal or hard plastic spikes will be allowed.
- 1.4.3. Foam tyres and foam/cap tyres are not allowed but internal foam inserts in moulded rubber tyre are permitted.
- 1.4.4. Buggy Rim dimensions:
- |                             |      |
|-----------------------------|------|
| Max. Bead mounting diameter | 56mm |
| Min. Bead mounting diameter | 41mm |
| Max. Diameter               | 62mm |
| Max. Width                  | 38mm |
- 1.4.5. Buggy Tyre dimensions:
- |               |      |
|---------------|------|
| Max. Width    | 45mm |
| Max. Diameter | 90mm |
- 1.4.6. Truck Rim dimensions:
- |                             |      |
|-----------------------------|------|
| Max. Bead mounting diameter | 57mm |
| Min. Bead mounting diameter | 55mm |
| Max. Diameter               | 62mm |
| Max. Width                  | 51mm |
- 1.4.7. Truck Tyre diameters
- |               |      |
|---------------|------|
| Max. Width    | 60mm |
| Min. Width    | 51mm |
| Min. Diameter | 95mm |

*Note: Bead mounting dimensions are measured at the point where the internal tyre bead meets the wheel. An internal locking ring may be used for the purpose of retaining the tyre only. The ring cannot be used to increase the wheels original size and/or the stiffness of the tyre sidewall.*

### 1.5. Race Classes

- 1.5.1 2WD 540 – Johnson 540, 27t, fixed timing and grey end belled motor, 6 cell Nimh only
- 1.5.2 2WD, 4WD Stock and 2WD Stock Truck – Brushed or Brushless motors allowed (as per rule 2.10.4), 6 cell Nimh (max) only, Lipos allowed
- 1.5.3 2WD, 4WD and Truck Modified – Brushed or Brushless motors allowed (as per rule 2.10.3), 6 cell Nimh (max) only, Lipos allowed

### 1.6. Duration

- 1.6.1. 2WD 540, Stock, & Modified Buggy: 6 Minutes plus completion of last lap
- 1.6.2. 4WD Stock Buggy: 6 Minutes plus completion of last lap.
- 1.6.3. 4WD Modified Buggy: 5 Minutes plus completion of last lap.
- 1.6.4. 2WD Stock Trucks: 6 Minutes plus completion of last lap.
- 1.6.5. 2WD Modified Trucks: 5 Minutes plus completion of last lap

## 2. On-Road Vehicles

### Touring Cars

#### 2.1. Classes

##### 2.1.1 Novice Class

###### 2.1.1.1 no age limit

###### 2.1.1.2 no Brushless motors allowed (as per Motor specifications – 2.10.5)

###### 2.1.1.3 Nimh or Lipo battery packs allowed (as per Battery specifications – 2.8)

###### 2.1.1.4 6 cell Nimh or 7.4v Lipos – hard cased only

###### 2.1.1.5 Weight Limit regardless of battery type is 1500grams including lap timing equipment

###### 2.1.1.6 If driver/entrant has placed in the top 3 of any ORRCA QLD or AARCMCC sanctioned event, regardless of class or scale, the driver/entrant is not eligible for this class.

##### 2.1.2 Stock Class

###### 2.1.2.1 Brushed and Brushless motors allowed (as per Motor specifications – 2.10.4)

###### 2.1.2.2 Nimh or Lipo battery packs allowed (as per Battery specifications – 2.8)

###### 2.1.2.3 6 cell Nimh or 7.4v Lipos – hard cased only

###### 2.1.2.4 Weight Limit regardless of battery type is 1500grams including lap timing equipment

##### 2.1.3 Modified Class

###### 2.1.3.1 Any Brushed or Brushless motors allowed (as per Motor specifications 2.10.3)

###### 2.1.3.2 5 cell Nimh battery packs only (as per Battery specifications – 2.8)

###### 2.1.3.3 No Lipos allowed

###### 2.1.3.4 Weight limit is 1430 grams including lap timing equipment

##### 2.1.4 General specifications for all classes:

###### 2.1.4.1 Four wheel drive only

###### 2.1.4.2 Pan type chassis are not allowed (1/10<sup>th</sup> and 1/12<sup>th</sup> scale chassis)

###### 2.1.4.3 Chassis must have independent suspension to all four wheels

###### 2.1.4.4 Each wheel must have a flexible joint (dogbone/universal/cvd) in its drive shaft

#### 2.2. Appearance

2.2.1. No part of the chassis, including wheels/tires/axles, may protrude outside the body shell when viewed from above.

2.2.2. No part of the motor or the electric's may protrude outside the body shell.

2.2.3. Aerodynamic shaped parts (splitters / diffusers /tunnels etc) may not be fitted to the underside the chassis.

2.2.4. The chassis must not be shaped to gain an aerodynamic advantage.

2.2.5. removed

2.2.6. Only single speed drive train allowed.

2.2.7. Bodies can be any 4-door sedan touring car body that is 195mm wide.

- 2.2.8. Bodies may not be cut above the lower door line or above the rear bumper line.
- 2.2.9. Bodies must be securely fixed to the chassis at all times during a race.
- 2.2.10. The only cut outs allowed on the body are, clearance for the wheels (wheel arches), mounting drill holes, antenna drill hole, and lap timing equipment drill hole.
- 2.2.11. All wheel arches must be cut out as on the original car with only minimal clearance between the wheels and the wheel arches allowed.
- 2.2.12. All windows must be clear or translucent grey/black. Windows may not be cut out.

## 2.3. Dimensions and Weight

### 2.3.1. Car Dimensions

	MIN (mm)	MAX (mm)
Wheel base	50	270
Width (with body shell)	175	195
Length (overall with body shell)	360	460
Height (to top of roof ready to race)	115	175
Wing width (including end plates and supports)	125	190
<b>Wing –chord</b>	-	45
Wing end plate (when separate)	-	40x20
Wheel diameter (excluding tire bead)	45	50
Tire diameter (when mounted)	55	67

### 2.3.2. Car Weights:

2.3.2.1. Touring Cars in racing trim – **6 Cell and lipo** classes minimum weight **including** lap timing equipment will be **1500 grams**.

2.3.2.2. Touring Cars in racing trim - **5 Cell** class minimum weight **including** lap timing equipment will be **1430 grams**

## 2.4. Wings

2.4.1. Only one wing is allowed, fitted in the same place as the wing on the original car.

2.4.2. Any wing that come with the original body maybe used any replacement wing must be as close in size as the original.

2.4.3. Only single element wings.

2.4.4. No additional pieces allowed that aren't from the original body manufacturer.

2.4.5. Front wings /splitters/ spoilers must be moulded into the body shell in the same positions as the original car.

2.4.6. Wings /splitters/spoilers/side dams must fix rigidly to the body and or wing and may not be removed whilst the car is in motion.



## 2.5. Tyres

- 2.5.1. Moulded rubber tires only.
- 2.5.2. Tires must be black, except for sidewall detail.
- 2.5.3. **Foam or rubber moulded inserts** may be fitted inside moulded rubber tyres.
- 2.5.4. Pneumatic tires are allowed.
- 2.5.5. Tyre warmers allowed.
- 2.5.6. Tyre additives are allowed.
- 2.5.7. Tyre cleaners or traction additives must be approved by the Organiser.

### Controlled Tyre

- 2.5.8. These Tyres will be self supplied by the competitor.
  - 2.5.8.1. Moulded rubber tyre: to be advised by ORRCA QLD in conjunction with the host club, 2 months prior to the titles
  - 2.5.8.2. Inserts are open.
  - 2.5.8.3. Wheels are open.
- 2.5.9. A maximum of 3 sets (4 tyres in a set) per competitor for the event.
- 2.5.10. Sets will be required to be checked in prior to the event.

## 2.6. Bumpers

- 2.6.1. Foam bumpers must be fitted.
- 2.6.2. No part the bumper may extend outside the body shell when viewed from any direction, or be lower than the chassis.

## 2.7. Race Class Duration

- 2.7.1. **Novice classes** will be 6 min plus completion of last lap.
- 2.7.2. **Stock classes** will be 6 min plus completion of last lap.
- 2.7.3. **Modified classes** will be 5 min plus completion of last lap

## 2.8. Batteries

- 2.8.1. **Nickel Metal Hydride – 6 (maximum)** Sub-C size cells . The individual cell dimensions are in accordance with Production tolerances **(44x23mm diameter with factory installed heat shrink)**. The cells must be rated by the manufacturer as 1.2 volts and up to but not exceeding **4600mAh capacity**.
- 2.8.2. All batteries must be commercially available for hobby use.
- 2.8.3. Batteries may not be changed during a race.
- 2.8.4. Batteries must bear manufacturer's identification on either the unopened total pack or on each individual cell. If the identification is missing the user must prove the legality of the cells to the race director's satisfaction.
- 2.8.5. Lithium Polymer Battery – 7.4v (2 cells only)
  - 2.8.5.1 Must be factory sealed in a hard case
  - 2.8.5.2 No modifications allowed to the case and/or the battery
  - 2.8.5.3 No soft cased Lipos allowed (for car battery)
  - 2.8.5.4 Must not exceed 7.4v – 5400mah
  - 2.8.5.5 Minimum rating of 20C
  - 2.8.5.6 Must be on ORRCA QLD or ROAR approved Lipo battery list (see appendix) until 31.12.08 and on ROAR approval list only from 1.1.09
  - 2.8.5.7 Any physical distortion, denting, puncturing or damage to the hard case of the lipo battery will deem the lipo battery to be ineligible for use at ORRCA QLD events.
  - 2.8.5.8 Overcharging is not allowed (voltage higher than 8.4v)
  - 2.8.5.9 Must have Lipo sack or other device (fire mitigation device able to withstand and contain a destructive failure without showing a flame)
  - 2.8.5.10 Must be used with electronic speed control that has either a inbuilt cut-off or used with an external cut-off device installed (6volts minimum).
  - 2.8.5.11 Must be charged using a Lipo capable charger only at a maximum rate of 1C.

## 2.9. Miscellaneous Vehicle Specifications

- 2.9.1. Rollover antennas are not allowed. Antennas must be of a flexible non-metallic material. NB. Piano wire or fibreglass not allowed.
- 2.9.2. 2WD Buggies/ Cars must be driven by the rear wheels only. Front wheel drive cars must enter the 4WD classes. Trucks 2WD only.
- 2.9.3. No vehicle shall be constructed as to be dangerous to persons or cause damage to other cars.
- 2.9.4. Only 1 car per driver per class is allowed. In the event of a broken chassis, the Race Director must inspect chassis before replacement of the chassis is permitted.
- 2.9.5. Automatic multi ratio gearboxes are not allowed.
- 2.9.6. Reverse may be fitted, but must not be used during racing or practice otherwise a penalty may apply to the driver.

## 2.10. Motors

### 2.10.1. Motors Specification:

Size:	05 sized displacement.
Max. Diameter:	36.02mm
Max. Length:	53mm (Excluding bearing housing and shaft)
Shaft Diameter:	0.125 inch. Production tolerances allowed.

### 2.10.2. General Motor Rules.

- 2.10.2.1. Ceramic magnets only (no cobalt or rare earth magnets)
- 2.10.2.2. Motors must be generally available through retail outlets for hobby use.
- 2.10.2.3. Motors can, end-bell, & armature must be from the same manufacturer model.
- 2.10.2.4. No Hybrids.

### 2.10.3. Modified Class Motors:

#### 2.10.3.1. Brushed Motor

- 2.10.3.1.1. Bearings, # of magnets, timing, springs and brushes are all open.

#### 2.10.3.2. Brushless Motor

- 2.10.3.2.1. Sensor or Sensor-less allowed.

### 2.10.4. **Stock Class Motors**, 27 turn, Fixed 24 deg, Motors:

- 2.10.4.1. Motors with bearings or bushings are allowed.
- 2.10.4.2. Motor timing must be (keyed into the end bell) fixed at 24 deg.
- 2.10.4.3. Motor Cans must have a maximum of two magnets only.
- 2.10.4.4. Brushes and brush hood will be lay-down configuration only.
- 2.10.4.5. No End-bell modifications allowed.
- 2.10.4.6. Brush springs are open.
- 2.10.4.7. Brushes shaping or modifying to allow timing advancement is prohibited.
- 2.10.4.8. Brush serrations and cavities are permitted but full face outline must remain.
- 2.10.4.9. The Timing Key in the End-Bell must not be worn to allow rotation.
- 2.10.4.10 Brushless Motors allowed
- 2.9.4.10.1 Any commercially available ROAR approved 17.5t brushless motor allowed.

- 2.9.4.10.2 sintered or bonded rotor allowed

- 2.9.4.10.3 motor must not be altered or modified from original state

### 2.10.5. **Novice Class**, 27 turn, Fixed Timing, Motor; Johnson 540 (683) Grey End bell motor.

- 2.10.5.1. Motor must be sealed.
- 2.10.5.2. No modifications allowed.
- 2.10.5.3. No Brushless motors allowed
- 2.10.5.4. Motors to be supplied by ORRCA QLD or the organisers

### 2.11. Radio Equipment

- 2.11.1. Radio equipment may be inspected at any time during the event.
- 2.11.2. The only frequencies to be used are:  
27 MHz 29 MHz                      40 MHz                      2.4 GHz
- 2.11.3. Competitors found using any other frequencies, in racing or practice may be disqualified from the event. No reversal of crystals allowed.
- 2.11.4. Drivers must have a spare frequency to change to upon request of the Race Director. In the event of a frequency clash the lower qualifier must change.
- 2.11.5. Transmitters are not to be taken onto the track at any time.
- 2.11.6. A maximum of two control devices may be used, i.e. two servos' or a servo and speed controller.
- 2.11.7. Gyros are not allowed.
- 2.11.8. At major events transmitters may be impounded after open practice and will only be released for official racing. Transmitters will be released at the end of the days racing or if the entrant is leaving the event.
- 2.11.9. During open practice, frequency pegs must be used and returned immediately after use. A ten minute limit may be enforced if courtesy is not given to drivers on the same frequency.
- 2.11.10.** Transmitters must be powered by not more than 9 AA size cells, each with a maximum of 1.5 volts. There is no restriction on the capacity (amp hours) of these batteries. **11.4V lipo packs are allowed.**
- 2.11.11. No separate battery pack may be used to power the transmitter.
- 2.11.12. The race director may delay the start of a race due to radio interference. Anyone not on his or her assigned frequency may be disqualified from that heat or final.

### 2.12. Speed Controllers

- 2.12.1. Electronic and mechanical speed controllers may be used. However only forward may be used during racing.
- 2.12.2. Speed controllers may only have timed delay, current limiters and keyboard programs. These programs must only be capable of adjustment whilst the car is stationary.

### 2.13. Driver Aids

- 2.13.1. On-board Traction control, active suspension and steering control by gyroscopes are not allowed, however, slipper clutches and fluid clutches are allowed Off-Road classes.
- 2.13.2. Sensors fitted to the car for the purpose of measuring suspension movement, wheel spin or tire slip are not allowed
- 2.13.3. Only two channels may be used in the receiver's for controlling the car.
- 2.13.4. Using spare receiver slots to power auxiliary equipment (eg. personal transponder, cooling fans) is allowed.

### **3. Driver Responsibilities**

#### *3.1. Scrutineering*

- 3.1.1. It is the responsibility of each driver to ensure their car meets all specifications.
- 3.1.2. At all events cars may be checked at the completion of each heat.
- 3.1.3. Cars will be impounded at the completion of finals for further technical inspection.
- 3.1.4. Failure to pass scrutineering will result in disqualification from that particular race and warning will apply to the driver.
- 3.1.5. Cars may be inspected at any time during the racing program.

#### *3.2. Marshalling*

- 3.2.1. Marshalling shall be done by drivers or a substitute who has been authorised by the Race Director.
- 3.2.2. The Race Director must be told of a substitute marshal prior to the marshal being required.
- 3.2.3. All marshals shall be at their designated point by the end of the 30 seconds to the start warning.
- 3.2.4. Marshals must not perform repairs on vehicles in place of their normal duties. An inoperative vehicle must be placed upside down outside the track for collection by the Pit Crew.
- 3.2.5. Drivers must marshal the race following theirs as directed by the Organisers.
- 3.2.6. Only Race Officials and Marshals are allowed on the track whilst a race is in progress.
- 3.2.7. Failure to marshal during qualifying heats may result in a 1 lap penalty from the drivers best qualifying score of the day and a warning will apply to the driver.
- 3.2.8. Failure to marshal, during finals or final, may result in a 1 lap penalty from the drivers best final score of the day and a warning will apply to the driver.
- 3.2.9. Failure to marshal, where there are no finals or qualifying, may result in a 1 lap penalty from the drivers best score of the day and a warning will apply to the driver.

#### *3.3. Conduct and Penalties*

- 3.3.1. All participants must strictly observe the instructions of the Race Director and Officials.
- 3.3.2. Foul or Abusive language will not be tolerated and may at the discretion of the Race Director bring disqualification of the offending driver from the race or event.
- 3.3.3. The consumption of alcohol or non-prescription drugs by drivers or officials during the race meet is not permitted.
- 3.3.4. Warnings and/or a "Stop Go Penalty" may be issued, to a Driver, by the Race Director and appointed Referees for the following: (Stop Go

Penalty for driving infringements only and are not redressed by the driver)

- Unsportsmanlike driving or behaviour.
  - Unintentional hitting of other vehicles.
  - Consistent or deliberate corner cutting.
  - Driving in a manner dangerous to other vehicles, eg. Driving against traffic.
  - Deliberate swerving to block a vehicle attempting to pass. Note: A driver is permitted to hold their racing line when in front of a vehicle if both vehicles are on the same lap.
  - Drivers failing to give way to faster cars during qualifying.
  - Drivers failing to give way to lapping cars during racing.
  - Abusive language or swearing.
  - Abusing marshals.
  - Pit crews going onto the track.
  - Coaching of drivers during a race.
  - Failing to pass scrutineering.
  - Failure to marshal.
  - Failing to return a transponder.
  - Failing to obey instructions of officials.
  - Using reverse.
  - Other misconduct.
- 3.3.5. A combination of 2 warnings in any race may result in the disqualification of the offending driver from that race.
- 3.3.6. A combination of 3 warnings/penalties on any day may result in the disqualification of the offending driver from that particular class.
- 3.3.7. The Race Director may report any person to the ORRCA Committee for further investigation and penalty. Once reported, the issue will be discussed by the ORRCA Committee, at the next ORRCA committee meeting.
- 3.3.8. ORRCA QLD reserves the right to refuse entry to any person for any event.

### *3.4. General*

- 3.4.1. Open toes sandals, thongs or bare feet will not be permitted on or near the track. Failure to wear adequate footwear will prohibit Competitors, Pit Crew or Marshals from participating in the event.
- 3.4.2. Cars are to be driven only within the confines of the track and may not be driven in the pits.
- 3.4.3. All cars must travel in the direction of racing at all times, racing or practice.
- 3.4.4. Cars will not be permitted to race in an un-driveable or dangerous condition.

### *3.5. Appeals*

- 3.5.1. Appeals, or verbal protests regarding any decision by an Official, including lap counting results or warnings, must be lodged with the Race

Director immediately after the posting of that events results, or the decision concerned.

- 3.5.2. Should the Race Director's decision on the matter be disputed or considered unsatisfactory the person may lodge an official protest.

### *3.6. Official Protest*

- 3.6.1. An official protest must be in writing and accompanied by a \$30 fee. The money will be refunded if the protest is upheld. The official protest must be lodged no more than 20 minutes after the completion of the race concerned or the decision concerned and may be handed to the Race Director or ORRCA Executive Committee person.
- 3.6.2. In the event of an Official Protest a jury will be formed. This jury will consist of one member from each ORRCA affiliated club. (State event) or ORRCA Australia affiliated State, (national event) represented at the event and a Chairperson will be elected. The jury's decision will be final.

## 4. Facilities and Equipment

### 4.1. Track Specifications: Off-Road

- 4.1.1. Length of the track to be 100 metres minimum, measured at the centre line.
- 4.1.2. Lane width to be minimum of 3 metres with 2.5 metres minimum at the apex and 3 metres minimum on the main straight and through the first bend.
- 4.1.3. Main straight should be minimum 24 metres.
- 4.1.4. Jumps should be liberally used throughout the circuit.
- 4.1.5. Bumps, either a series of “stutter bumps” or moguls should be employed to enhance the overall personality and challenge of the track.
- 4.1.6. Additional aspects such as, drop-offs elevation changes, berms etc, may also be used.
- 4.1.7. Designs must include both left and right hand turns and has one or more straights.
- 4.1.8. Grids and finish line must be clearly marked on the track.
- 4.1.9. Edges and apexes must be constructed so as to not cause damage to cars and of a height that does not obscure a car when viewed from the drivers stand.
- 4.1.10. Track maintenance should be carried out in such a way, to ensure a consistent and fair track is made available to all entrants regardless of the number of heats or rounds.
- 4.1.11. Track repairs should be carried out regularly between heats, small amounts at a time, in such a way as to keep the track as consistent as possible. At no time should the track be groomed all over during the race day.
- 4.1.12. 240 Volt AC power must be available.

### 4.2. Track Specifications: On-Road

- 4.2.1. Length of the track to be 100 metres minimum, measured at the centre line.
- 4.2.2. Lane width to be minimum of 3 metres with 2.5 metres minimum at the apex and 3 metres minimum on the main straight and through the first bend.
- 4.2.3. Main straight should be minimum 24 metres.
- 4.2.4. Chicanes, shape bends, off-camber corners, hairpins, sweeping corners, slight rises and falls of the track, should be liberally used throughout the circuit.
- 4.2.5. Designs must include both left and right hand turns and has one or more straights.
- 4.2.6. Grids and finish line must be clearly marked on the track.
- 4.2.7. Edges and apexes must be constructed so as to not cause damage to cars and of a height that does not obscure a car when viewed from the drivers stand.



- 4.2.8. Track maintenance should be carried out in such a way, to ensure a consistent and fair track is made available to all entrants regardless of the number of heats or rounds.
- 4.2.9. Track repairs should be carried out regularly between heats, small amounts at a time, in such a way as to keep the track as consistent as possible. At no time should the track be groomed all over during the race day.
- 4.2.10. 240 Volt AC power must be available.

#### *4.3. Drivers Stand*

- 4.3.1. Drivers stand must be built of sturdy construction and be a height so that all parts of the track are clearly visible.
- 4.3.2. It should be capable of holding 10 drivers comfortably spaced.
- 4.3.3. The drivers stand should be located between 1metre and 3metres from the racing surface.
- 4.3.4. During racing only the Drivers taking part in the current race, and Officials, are permitted on the Drivers Stand.

#### *4.4. Lap Counting*

- 4.4.1. Lap counting shall be by computer system, preferably with AMB type system.
- 4.4.2. National titles events must use an AMB 20 transponder system with minimum AlyCat software or equivalent system.
- 4.4.3. Transponders must be firmly secured by the competitors in a position that is compatible with the operation of the system.
- 4.4.4. Personal Transponder can be used.
- 4.4.5. Numbers should be used as a back up to transponders however, races will not be re-run due to loss or failure of a transponder.
- 4.4.6. Failure to return a transponder before the end of the next race may result in, disqualification of the driver from that particular race and a warning will apply to the driver.
- 4.4.7. Drivers and pit crew are not permitted in the lap scoring area.

## 5. Racing Program

### 5.1. Race Format

- 5.1.1. First round of grid positions will be by random draw, thereafter drivers will start in order of finishing positions from each previous race.  
(Computer system permitting)
- 5.1.2. Starting grid must be cleared by the end of the 30-second to the start warning. All cars not on the starting grid by then must start from the rear of the grid.
- 5.1.3. Finals will start from a staggered (each vehicle back from the next) and offset (not directly behind each other) grid with a minimum of 2 metre between rows of vehicles.
- 5.1.4. There will be no restarts due to jump starts.
- 5.1.5. A vehicle will be judged to have jumped the start if all the wheels of the vehicle pass over its grid line position, prior to the official start signal. This may result in a 10 second penalty.
- 5.1.6. There will be a penalty line, 1 meter in front of the first row of the grid. Any vehicle crossing that line before the actual start may receive a 1 lap penalty and a warning will apply to the Driver.
- 5.1.7. Any race stopped due to race equipment malfunction or official's error will be re-run after a suitable delay.

### 5.2. Race Director

- 5.2.1. The Race Director is under the direct authority of the relevant ORRCA Executive Committee and is responsible for running the Event.
- 5.2.2. The Race Director is responsible for ensuring that the following tasks are done correctly:
  - Lap counting and display of results.
  - Starts.
  - Marshalling.
  - Scrutineering and Transponders.
  - Frequency control.
  - Issuing of warnings.
  - Receiving of protests.
  - Calling the jury.
- 5.2.3. At major meetings the Race Director should appoint Referees to observe the racing (and must include at least one (1) race referee on the driver's stand overseeing the racing at all times along with the race director)
- 5.2.4. The Race Director may make urgent decisions for safety or unforeseen situations.
- 5.2.5. Should any decision made by the Race Director be disputed or considered unsatisfactory an Official Protest may be lodged.

### 5.3. Drivers Meeting

- 5.3.1. A Drivers Meeting must be held each day prior to the commencement of racing.
- 5.3.2. Drivers should be introduced to Race Director and other Officials.
- 5.3.3. Any local rules should be explained or pointed out to the Competitors.
- 5.3.4. The race program should be explained by the Race Director and any questions shall be answered at this Meeting.

#### *5.4. Racing Program*

- 5.4.1. ORRCA Executive Committee, Club Delegates (State Events), National Delegates (National Titles), will determine possible changes to the race procedure in unusual or extreme circumstances.
- 5.4.2. Off-Road 2WD and 4WD may be raced on separate days, with Truck races on the 4WD day.
- 5.4.3. A practice period, minimum 30 minutes, should be allowed at the commencement of each days racing.
- 5.4.4. For the Nationals, the track should be available for open practice for a minimum of 2 days prior to the commencement of the event, subject to rain.

### *5.5. Qualifying*

- 5.5.1. Qualifying will consist of a minimum of three rounds with a maximum of six rounds.
- 5.5.2. Qualifying to be conducted under Round by Round Method.
  - 5.5.2.1.1. A driver's best 2, 3 or 4 (dependant on number of rounds) fastest qualifying times during the qualifying heats will decide their final and grid position.
  - 5.5.2.1.2. if there are 6 rounds of qualifying, then 4 rounds will count
  - 5.5.2.1.3. if there are 5 rounds of qualifying, then 3 rounds will count
  - 5.5.2.1.4. if there are 4 rounds of qualifying, then 3 rounds will count
  - 5.5.2.1.5. if there are 3 rounds of qualifying, then 2 rounds will count
- 5.5.3. Ties will be broken by next best qualifying times as necessary.
- 5.5.4. Individual starts may be used during qualifying.
- 5.5.5. Qualifying heats will consist of between 3 and 10 drivers.

### *5.6. Finals*

- 5.6.1. Finals will consist of between 5 and 10 drivers.
- 5.6.2. All National Finals will consist of the maximum 10 drivers, if entries allow.
- 5.6.3. There will be 3 Finals for each "A Class", with results decided by taking each drivers best 2 positions out of 3 of the Finals. Points will be awarded for positions, 1 point for first, 2 points for second etc. The lowest score wins.
- 5.6.4. A tied score will be broken by there qualifying position for the Finals.
- 5.6.5. Other Finals can be a one off sudden death race, but may be run with 3 finals if time allows.

### *5.7. Wet Weather*

- 5.7.1. A rain day should be allowed for in the race program.
- 5.7.2. The Race Director may interrupt racing due to rain or if there is water on the track.
- 5.7.3. If rain interrupts racing or qualifying the program can restart, from the last completed race, after a suitable delay.
- 5.7.4. At least 2 rounds of qualifying must be completed for an event to be decided if cancelled due to rain.
- 5.7.5. If rain interrupts Finals, any Finals that have been completed will stand. Where "A Finals" consist of 3 legs, the results of any final legs completed will be used to determine results. I.e. If 2 legs of the "A Finals" are completed then both will be used to determine results with qualifying used in the event of a tie. All other results will be decided using qualifying positions.

### *5.8. Concourse de Elegance*

- 5.8.1. Entries to be in the name of those who have put the most input into the finishing of the vehicles body.

- 5.8.2. Drivers may enter one vehicle in Concourse for each class in which they are racing.
- 5.8.3. Entries must be race legal when presented for judging.
- 5.8.4. Entries must compete in at least one race in the class in which they are entered, in the same configuration in which they contested the concourse and must complete at least 50% of that race.
- 5.8.5. Entries will be judged in accordance with the Concourse de Elegance Judges Sheet, set out below.

*Concourse de Elegance Judges Sheet  
Using the following points as a guide, judges should overview the entries and select a maximum of 4 vehicles for detailed judging as below. Allot each vehicle points between 1 and 10 with 5 points being average in each category. Zero if not applicable, eg no interior detail*

<b>Category Cars</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Originality of design.				
Use of theme (R/C relates scores more).				
Technical proficiency (sharp lines, even fading, mistake free).				
Degree of difficulty (complexity, fine detail).				
Use of colour.				
Special paint effects (imaginative, 3D effects).				
Use of stickers.				
Condition of body/car (shine, cleanliness).				
Special fittings (driver figure, interior detail)				
General overall appearance.				
<b>Total Points</b>				

**Reciprocal Rights**

*Amongst ORRCA member clubs there is an unwritten agreement that ORRCA members presenting as visitors at another ORRCA club and, who show a current ORRCA Qld. Membership card, will be treated in the same way as members of the club being visited. In particular this relates to race fees at clubs where a premium is charged for non-members.*

*Some clubs may not adhere to this unwritten agreement but members are encouraged to show their card at nomination time - and ask. Obviously members who cannot show a current membership card will **NOT** be allowed any benefit.*

## Appendix C

Lithium Polymer Battery Pack Approved List (as at February 2008) - this list expires 31.12.08 and will be replaced by the ROAR approval list only from 1.1.09.

1. Team Orion Carbon Edition 3200 mah LIPO
2. Team Orion Carbon Edition 3600 mah LIPO
3. Team Orion Platinum Edition 4800 mah LIPO
4. CORE RC 5000 mah LIPO
5. CORE RC 3250 mah LIPO
6. Trakpower 4900 mah gold LIPO car pack
7. Peak Racing 3200 race spec LIPO
8. Max Amps 3000hv mah LIPO (hard case version only)
9. Max Amps 4000hv mah LIPO (hard case version only)
10. Max Amps 5000hv mah LIPO (hard case version only)
11. Reedy 5000mah LIPO
12. Reedy 3200 mah LIPO
13. Vtec Nosram 5000(hard case version only)
14. Venom Xpac 5000mah (hard case version only)
15. LRP Vtec 5000 and 5300 and 8000 (hard case version only)
16. NEU 5000A (hard case version only)
17. SMC 4000 and 5000 mah (hard case version only)
18. Trinity 4500 mah Reference Lipo
19. Team Checkpoint 5400 mah Lipo (hard case version only)
20. Losi 7.4V 5000 MAH 2 Cell LIPO 20c

