



## 2009 1/10<sup>th</sup> Electric Circuit Rules

### 1:10 Electric Circuit

#### 1. APPEARANCE

- 1.1 The essence of the sport is radio controlled motor racing. The cars must be realistic and when initially entered in the meeting the bodyshell must be neatly finished and complete.
- 1.2 The body and chassis must be securely joined at all times when the car is on the track.

#### 2. RADIO EQUIPMENT

- 2.1 Only legal frequencies may be used, and all equipment must conform to the current regulations.
- 2.2 No reversal of crystals will be allowed. If a competitor is found to be using reversed crystals or illegal frequencies, they will be disqualified from the event.
- 2.3 No radio equipment (apart from the aerial) may protrude through the bodyshell.
- 2.4 Voltage supply to the transmitter must not exceed the manufacturer's recommendations. Any competitor found using external or additional battery packs must have proof that it conforms to the radio manufacturer's specifications. In addition, no additional aerial or extension should be added to the driver's radio equipment.

#### 3. GENERAL RULES

- 3.1 Tyres: Must be black except for any sidewall detail.
- 3.2 Tyre cleaners or traction compounds that can coat or damage or in any way mark the racing surface are specifically banned. The use of any tyre additive containing any known harmful chemical is strictly prohibited. The use of tyre cleaners and or traction compounds is at the race organiser's discretion. Notification of known non-allowable tyre additives should appear on the entry forms. The use of any oil of wintergreen-based product (i.e. smells of 'Deep Heat') is not allowed. Tyre additives are allowed to be used at the competitor's own risk at all National Championship events. No tyre additives are allowed in wet conditions.
- 3.3 It is strongly recommended that all competitors follow the instructions on all products (e.g. cleaners, aerosols, additives, etc.). If you are unsure about a product then ask to see the COSHH report on it. If there is no COSHH report on the product then do not use it.
- 3.4 All cars must have identifying numbers in the positions designated by the Race Director.
- 3.5 No portion of the chassis, wheel, tyres or equipment may extend beyond the body; this includes servos, etc.
- 3.6 No car shall be constructed so as to be dangerous to persons or cause damage to competitor's cars. No part of the car may be allowed to cause damage to the track surface.
- 3.7 Only one drive motor is allowed per car.
- 3.8 The use of multiple-speed transmissions (gearboxes) is not allowed in any class.
- 3.9 Driver Aids:
  - (a) It is the objective of this rule to ensure that the 1:10 Electric Circuit series be a test of driver skill. The BRCA Committee seeks to limit the type of driver aids to a minimum to achieve this objective. Traction control, active suspension and steering by gyroscopes are not allowed. Sensors fitted to the car for the purpose of measuring suspension movement, wheel speed or tyre slip whilst the car is in motion are not allowed.
  - (b) Unless an electronic or mechanical driver aid is listed below in rule (c), it is not allowed for use in any class in the 1:10 Electric Circuit series.
  - (c) The fixed single ratio transmission may not include a mechanical device/s between the drive motor output and the gearbox input for the purposes of controlling torque (e.g. slipper clutches). A differential may include a mechanism for apportioning torque over the axle/s (e.g. limited slip differential). This mechanism must only be capable of adjustment manually whilst the car is stationary. A mechanical or electronic speed controller may include a mechanical or electronic device to limit the current/voltage passed from the batteries to the drive motor (e.g. timed delay, current limiter, keyboard programs). Setting or programming of such a device must only be possible whilst the car is stationary. Changes to the setting or program during a race are not allowed.
  - (d) The use of any channels to receive electrical signals from sensors carried in the car is prohibited.
  - (e) Any competitor found in contravention of the spirit or fact of rules (a), (b), (c) & (d) will be disqualified from the meeting/s.
- 3.10 Commercial Availability of New Products - Before they can be used by a competitor at a BRCA National event, new motors and batteries must be approved by the BRCA Electric Board. New bodyshells must have been available in the UK for 2 months and be approved by the BRCA 1:10 Electric Circuit Eligibility Officer. Approval lists to be published on the BRCA website and made available for review at each BRCA National.

3.11 Price limits for motors and batteries will be set as per the Electric Board (with a maximum increase limit of 10% in any one year). The BRCA 1:10 Electric Circuit Committee will have to agree to any price increase.

3.12 Bodysells may be added to the homologation list at any time subject to approval and meeting the two month rule. Each manufacturer must pay a registration fee of £50.00 and any body being submitted for approval must pay a levy of £5.00 per body. Any new bodies being submitted must have the part number moulded into the front windscreen. Bodies submitted for approval will be kept by the Section for future reference.

3.13 Any AGM rule proposals to be received by the 1st Friday in September on the standard template provided.

3.14 Generators can be used at competitors own risk at BRCA National events (where permitted by hosting club). Hosting clubs will designate a "generators free" area with free access to track & facilities.

3.15 It is each competitor's responsibility to ensure that their car meets all technical and eligibility requirements.

#### 4. BATTERIES

4.1 Only approved sub-C sized rechargeable cells and Li-Po cells as per the respective BRCA Electric Board rules and lists can be used. All cells must have their sub-C heat-shrink or LiPo hard case substantially intact.

4.2 'Super Touring' cars will be driven by a maximum of five Sub-C sized cells having nominal voltage of 6.0 volts (open modified motors), or by Li-Po cells having a nominal voltage of 7.4 volts (6.5 brushless motor).

4.3 'Pro Stock' cars will be driven by cells producing a maximum nominal voltage of 7.4 volts. These can be a maximum of six Sub-C sized cells, or by Li-Po cells having a nominal of 7.4 volts.

4.4 The BRCA will not tolerate any abuse of batteries. Any driver found abusing their batteries at BRCA sanctioned meetings may be excluded from the National Championship races for the rest of the season. Maximum voltage of LiPos not to exceed 8.44 volts at any time.

#### 5. MOTORS

5.1 (a) Modified Motors - Only modified motors approved by the Electric Board are allowed.

(b) Brushless Motors - Only brushless motors approved by the Electric Board are allowed.

5.2 (a) Stock Motors - Only 27 turn rebuildable stock motors with a maximum fixed timing of 24 degrees approved by the Electric Board are allowed.

(b) Super-Stock Motors - Only 19 turn spec motors approved by the Electric Board are allowed.

(c) 10.5 Brushless Motors – only 10.5 turn ProStock brushless motors approved by the Electric Board are allowed.

5.3 Any driver found using an illegal motor will lose all lap scores up to that point. If found using an illegal motor for the second time, the driver will be excluded from the National Championship races for the rest of the season.

#### 6. TOURING CARS

6.1 All cars must conform to appearance, radio and general rules, and have independent suspension operating on all four wheels (no Pro-10 cars allowed).

6.2 For all classes, bodysells to be from a list drawn up by the BRCA eligibility officer. The list to be representative of what is currently 'commercially available' in the UK. (Subject to being submitted by the manufacturer / distributor.) With the following provisos:

o Must be representative of a 'full size' Touring Car or GT (Racing version or Road going) i.e. NO 'designer' type shells.

o No NASCAR, Rally, Truck or 'Pure Racing' type bodysells allowed.

o Must be able to meet the current dimensional requirements.

Where a new submission supersedes a previous version of the same type. The replaced version to come off the list after one calendar year.

6.3 Bodies are not to be cut above the lower bumper line at the front or above the bottom line of the doors, the rear bumper/valance to be no higher than 50mm. No other openings are allowed on the body, except for mounting, aerial and transponder holes (i.e. no open windows).

6.3(a) Details of all front and rear lights plus the main front grill must be clearly contrasted from the surrounding paintwork. Windows are to be left clear and unpainted.

6.4 Under body/chassis aerodynamic aids of any nature are not allowed. Only motor guards are allowed. Smooth lexan undertrays may be fitted to waterproof the cars.

## 6.5 Touring Car Dimensions (car/chassis to be placed on an 8mm block for purposes of measuring roof height):

Min(mm)	Max(mm)		
Wheelbase	250	270	
Width (without body)	170	190	
Width (with body)	175	200	
Length (inc. body and wing)	360	460	
Height (to top of roof)	120	175	
GT/GTO height (to top of roof)	100	175	
Wing width inc.	125	190	
Wing chord		40	
Wing endplate		40 x 25	
Wing overhang (at rear)		10	
Wheel Dia (excl.tyre bead)	46	50	
Wheel width inc.bead	18	26	
Tyre width (across sidewalls)		27	
Tyre diameter			
(when mounted on wheels)	52	67	
Ride height (indoors only)	5		

6.6 Rear wings must be mounted in the same place as was intended by the body manufacturer and the overhang must not exceed 10mm at the furthest point, to be measured from the boot lid. The height of the wing may be adjusted, but the wing including endplates must not extend higher than the roofline. Wings (excluding endplates) are to be of single moulded construction (no flat-packs/bend your own).

6.7 The minimum weight, including personal transponders but not handout transponders:

4WD 6-cell/LiPo = 1500g, 4WD 5-cell = 1425g, 4WD 4-cell = 1350g, Front wheel drive/2WD = 1400g.

6.8 The use of tyre warmers is allowed but may not be used/brought into the defined race/track area.

### 6.9 Controlled Tyres

(a) One manufacturer and compound of pre-built tyre for each class.

(b) Tyres shall have the manufacturer's name and the tyre compound on the sidewall

(c) Any Competitor being suspected of not running to the rules will have their tyres checked at the end of the event, if any competitor is found using any other insert other than which should be used, will be disqualified from that event, plus banned from the next 2 events. This could be carried over to the next championship.

(d) Competitors having their tyres checked, will have a pair replaced for the next event.

6.10 A list of approved Slick (dry) tyres and treaded (wet) tyres will be formulated by the BRCA Committee and only one of those can be used for the National championship. A single approved control slick tyre and a single approved control treaded tyre for the wet should be voted for the National championship from an approved list compiled by the BRCA. This vote should take place annually by the competitors of the previous years championship.

The maximum price of four controlled tyres will be £24.99 (slick) and £29.99 (wet). All tyres must be commercially available in the UK two months before the start of the championship.

6.11 All wheels to have competitor's BRCA number legibly marked in permanent ink by the competitor and must be clearly visible.

6.12 Failing a non performance enhancing scrutineering check, the driver will be issued with a warning not a failure. Only one warning will be given. Afterwards it will be a failure. (e.g. shell lights, painted windows etc)

## 7. GT10 CLASS

7.1 Rules for GT10 Class to be maintained on section website.

7.2 Class to be promoted by section committee supporting initial events.

## 8. RACE PROCEDURES

8.1 Race duration to be 5 minutes.

8.2 a) The maximum number of cars per race shall be 10. The number of qualifying rounds is to be stated at the drivers briefing. Finals and grid positions are to be determined by a driver's final qualifying position.

b) Once a qualifying time is set, a driver can asked to be removed from the finals. They will still receive a grading score from the meeting.

8.3 Heats are to use the staggered start system. Each car will start separately when its number is called. Cars not going off when their number is called shall start when all the other cars have left. Starting before its number is called will be referred to as a 'jump start'. If for any reason a car did not start, the time counting for this car will begin automatically when one of other cars has completed its first lap. Round one starting order is from 1 to 10. Subsequent rounds will start in FTQ order. Heats to be run in the following order: Pro-Stock, Modified. Finals are to be run in the same order as the heats.

During the 10 second countdown, no cars will be allowed entrance to the racing surface until after the start of the heat, at which time the car may be placed on the starting line after all the other cars have left. No practice laps are allowed.

In the event of cars being placed on the line once the 30 second countdown has begun, the countdown should be stopped, offending cars placed at the back of the grid and then the countdown restarted from the 10 second mark.

8.4 After each heat, the competitor in that heat will have their cars placed into impound and assume assigned marshalling positions for the following heat. No other person is allowed on the track (except officials) while the race is in progress.

Failure to marshal or provide a competent substitute will result in loss of best time; the Race Director must be notified of any change first. Failure to marshal a second time will result in disqualification from the meeting. All competitors must remain on their marshalling points until released by the following competitor. Failure to marshal in one final leg will result in loss of the best final score for the competitor.

8.5 Finals will use a grid start and cars are to be spaced at 3m intervals on a staggered grid. Top qualifier is to choose the side of grid.

8.6 In the event of a tie in qualifying points, then the next best qualifying time will decide the qualifying positions.

8.7 The frequencies for heats and the finals are not to be published.

8.8 At the end of the race, each competitor will be told they have finished. You must then pull into the pull off area and remain there until the end of the race.

8.9 Drivers are to remain quiet on the rostrum (e.g. if the car breaks down) to the end of the race.

8.10 During a race, the only people who can pass any information to a competitor are the Race Director (or their assistant) or Referee. Receiving information from an assistant will result in a loss of that heat/final time. Competitors may pass on information to each other on the rostrum regarding cars that have stopped on the circuit.

8.11 All competitors will be graded from their points divided by the number of meetings they have attended using only the counting scores, e.g. M. Jones has competed at two meetings with 175 points, divide 175 by 2 = 87.5. Competitors are to be booked-in using the BRCA grading system. Gradings will be carried over from one championship to the next year's championship.

8.12 The number of entrants per class will be based on the number of entries received on a first come first serve basis. Drivers will only be permitted to compete in one class per meeting.

8.13 Practice rounds will be controlled and limited to slots of no more than 6 minutes duration. The rostrum shall be cleared of drivers at the end of each slot. Drivers of different classes shall not practice at the same time. Control of this practice session is to be determined by the BRCA Committee. Rule 8.22 also applies for practice.

8.14 A pegboard will be used during practice.

8.15 An AMB system is to be used for timing and results should be determined based upon the accuracy specified in the club handbook (recommended to be the same as published by AMB). The Race Director must ensure that a competitor's laps are properly recorded irrespectively of the continued proper functioning of the lap counting system except when:

(a) The competitor has failed to fit any lap-recording device provided to his car in accordance with instructions given by an Official of the meeting.

(b) The lap-recording device becomes detached from the car due to failure of the competitor's equipment; e.g. transponder mounting breaks, car is damaged in a crash.

(c) The competitor uses their own transponder/timing equipment.

8.16 Any race or heat stopped due to race equipment malfunction or an Official's error will be rerun after a suitable delay.

8.17 A public address system is to be used.

8.18 An audible signal will start each final.

8.19 Meetings should be finished by 6.30pm at the latest.

8.20 National Meetings can only be abandoned by a majority decision of the BRCA Committee members present.

8.21 Only electrical powered vehicles are to be raced at BRCA 1:10 Electric Circuit meetings.

8.22 Racing in the wet will be approved by the Race Director when necessary.

8.23 In severe weather conditions the Race Director is responsible to ensure that the track is in a raceable condition.

8.24 Any driver, representative, mechanic or friend of a driver found to be under the influence of drink or drugs, or using abusive language or behaving abusively will be expelled from the meeting and may be subject to further restrictions on admittance to sanctioned meetings by the BRCA Committee.

Anyone who brings the sport of model car racing into disrepute will be answerable to the Committee.

8.25 All race venues must provide ladies and gents toilets that must be open from when practice starts and until the trophy presentation has finished.

8.26 Protests must be received by the BRCA Steward for the meeting in writing with a fee of £25. The BRCA Steward's decision is final. This fee is refunded if the protest is upheld. No protests will be accepted after the prize giving ceremony. Any call made by a referee including taking no action cannot be subject to protest.

8.27 No mobile phones are allowed on the drivers' rostrum nor are they allowed to be used in the pit lane or on the track.

8.28 BRCA Committee to supply scrutineering aids for all National rounds or supply standard test weights and jigs.

8.29 Clubs running National meetings are encouraged to provide commentary at the meeting, to cover finals at a minimum.

8.30 Minimum 1h20m between the start of each round of qualifying and each round of finals.

## 9. CHAMPIONSHIPS AND SCORING

9.1 The BRCA 1:10 Electric Circuit National Champion shall be the driver scoring the most points under the following rules:

(a) Only BRCA Members can score points in the championship and current membership cards are to be produced on booking-in (non-members may not race).

(b) For each driver, three finals will be run. The winner of each final gets 1 point; the second gets 2 points and so on. Taking the lowest two points added together, the finalist with the lowest number of points will be declared the winner. In the event of a tie the driver with the better qualifying position will be awarded the tie. Cars that do not start or fail technical inspection will get 10 points.

In the event of a meeting being cancelled after one complete round (e.g. due to bad weather), points will be awarded per the qualifying list. e.g. 1 for Top Qualifier & 1 for the win. Any finals not run will award points on qualifying position.

Championship Points: 100 points will be awarded to first place overall in the A final, 99 points will be awarded for second place, 98 for third place, and so on down to last place at the meeting.

In the event of a meeting being cancelled after one complete round (e.g. due to bad weather), points will be awarded per the Qualifying list. E.g. 100 for 1st, 2nd place will be awarded 99, and there after in descending order.

(c) Each year, all meetings declared by the committee as counting towards the Championship will be used in the calculation of scores. A competitor may consider their best scores from 50% of the meetings declared, plus one, with halves rounded down.

(d) In the event of a tie at any place in the Championship, only counting scores will be used to break the tie. The highest score will be considered first (and so on down if required) until one driver has a higher score than the other. If this fails to resolve the tie, the number of first, second, third, etc., places will be compared until a driver with a better number of higher finishing positions is found. If the drivers are still tied then the number of first, second, etc., qualifying places will be compared until one driver has a better qualifying position. If this fails to break a tie, the position will be shared.

(e) At all BRCA Championship meetings, up-to-date championship positions should be displayed. A copy of the BRCA rules must be available.

9.2 Two championships to be run:

o 'Super Touring' for 5-cell modified motors (including brushless) OR 6.5 brushless modified motor (or 12 turn brushed motor) with maximum of 7.4V nominal voltage LiPo battery.

o 'Pro Stock' for 19-turn Super Stock motors and 10.5t+ Brushless motors with batteries of 7.4 max voltage.

Three divisions/formulas within each class.

A competitor may only enter one class.

Calendar and venues to be set by the BRCA committee.

9.3 A Formula system will be run during the Touring Car Championship.

9.4 A Juniors Championship to be run annually, to one-day meeting format and using the same control tyres for that season's National championship.

9.5 Only bona fide clubs affiliated to the BRCA may be awarded a round of the National Series. If required, as proof of club status, minutes of an AGM showing a vote has been taken to establish a committee will be sufficient.

9.6 The National Championship to consist of five x two day meetings. These meetings will have a maximum entry limit of 14 heats. Three sets of slick tyres to be allowed per competitor, and two set of treaded tyres. Round by round qualifying with three scores out of five, and best two from three finals to count. Points scored for overall final results.

Friday: Track Closed

Saturday: 2 x Practice rounds, Drivers Briefing, 3 x Qualifying Rounds

Sunday: 2 x Qualifying Rounds, 3 x finals

9.7 Dates and venues for the National championship to be voted for at the section AGM.

9.8 A 2009 National constructor's trophy may be awarded. Teams of 4 drivers must be nominated before the first meeting, best three scores from that team to count from each meeting.

## 10. RACE ENTRY

10.1 (a) National entries will be accepted via an online central booking process. This will be opened for entries on February 1st of each year. No telephone bookings will be accepted.

(b) Preferential entries will be given for the first ten days only to the drivers who completed the minimum number of counting rounds in the previous years championship. Thereafter entries will be accepted on a first come first served basis.

(c) Details of the circuits, homologation lists, etc. will be available via the BRCA website.

10.2 Entry fee is £20.00 per event. All fees must be paid in advance and entries will not be accepted until payment is received. No post-dated cheques will be accepted. No entries will be accepted in the 7-day period before a meeting. Any entries within the 7-day period before a meeting will be charged an extra £10.00. All monies will be paid into the 1:10 Electric Circuit section account and will be for the use of that section only.

10.3 Cancellations will be accepted, providing written notice is provided two weeks prior to the event. A refund of £14.00 will be provided, payable at the end of the championship season. A cancellation made within two weeks of the event will not be eligible for a refund. Any 'no shows' on the day will forfeit their rights for a priority entry for the following season, regardless of how many other events they may have entered.

10.4 No Shows - Any driver not turning up at an event and not notifying the host club in advance will have their entry withdrawn from the next event they are booked into. The entry will be reinstated on payment of a penalty fine of £10 or on receipt of a satisfactory explanation of the mitigating circumstances - the committee must receive this eight days before the next event.

## 11. RACE OFFICIALS

11.1 A BRCA sanctioned event must have the following officials:

(a) Race Director or Deputy must be present at race control throughout the timed heats and finals.

(b) Chief Scrutineer .... To check that technical and eligibility rules are upheld.

(c) Timekeeper, who will check that the timing equipment is operational and that all races have started and finished in accordance with the rules.

(d) Referees to be used for all qualifying heats and finals Referees for each heat and final to be selected by the BRCA committee.

11.2 A BRCA 1:10 Electric Circuit Committee member (usually the Secretary or Chairman) will be appointed as the BRCA Steward for the meeting, and will have overall authority regarding compliance to the rules and regulations. This steward may be called upon to resolve any dispute.

11.3 The Referees will monitor driving standards and competitor behaviour. For a first offence the Referee will normally issue a clear warning. Serious or further offences may incur a stop-go penalty, or loss of best score/final time heat. The Referee will clearly announce any penalty and record it on the published results for that heat/final. Three offences in a meeting will mean a driver is disqualified from that meeting.

11.4 A Referees decision is final and may not be protested.

## 12. INTERNATIONAL CHAMPIONSHIPS

12.1 EFRA/IFMAR team selection will be based on the previous year's championship results, subject to those being eligible having sent the section the amount required to enter that competition (licence and entry fee). If a competitor who is eligible cannot or has not sent the amount by the 1st February, the next eligible person on the list will be asked if they wish to attend. There are no exceptions to this rule. No refunds will be given for deposits paid unless that place can be sold. There will be two wild card entries left open to be selected by the BRCA Committee. The BRCA Committee will select teams.

12.2 If the BRCA has any Official Team Clothing available, all competitors representing the BRCA at any International Event, must wear this Clothing for any Opening Ceremony, after which they can wear any other suitable clothing of their choice. The TC Section will provide this clothing to any Competitor representing the BRCA TC Team, free of charge.

## 13. TROPHIES

13.1 Trophies will be awarded to the winner of each final, and for top qualifier in each class.

13.2 The section will fund meeting and end of season trophies.