



BRCA

BRITISH RADIO CAR ASSOCIATION

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MEMBERS

Handbook 2019

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HOW TO USE THIS HANDBOOK

There are very few rules in it - the rules that apply to you for the majority of your racing are the Association General Rules on pages 58-60. Those General Rules, in conjunction with your local club rules, form the backbone of the sport and you need to read and ensure you understand them.

This Handbook is designed to give you the very basics of what you need to know to safely enjoy our sport, it is the tip of a very large iceberg.

You will find an introduction to some of the classes raced, but by no means all - the ones listed in this book are the classes currently raced at National meetings, there will be lots of other classes raced locally. Just because a class isn't listed in here doesn't mean we don't recognise that it exists and is great racing, just that a group of racers - just like you - haven't got together and organised a series of nationwide events for it . . .

Yet . . .

You will find links to the Construction and Procedural rules for each National class in their sectional notes.

How rules are applied

The Association General Rules contained in this book apply to us all at most of the race meetings we go to - it will clearly say if it doesn't!

Section / Class rules apply at National meetings and other events organised by a section committee as they see fit.

Section / Class rules do not apply at Clubs - unless a club chooses to apply them, in that case it is entirely the clubs choice, either way.

Important note

The Association General Rules are designed to ensure we all stay safe, both literally and legally. They may appear unusual in some areas and some statements may appear to be 'stating the obvious' too.

But . . .

They are written like this to ensure our insurance policy, procedures and rules conform to the Law of the Land - make sure you have read them as they DO apply to you.

BRCA Handbook 2019

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The BRCA Handbook is published annually and supplied to all current members and affiliated clubs of the association.

The BRCA's consent must be obtained before any part of this publication may be reproduced in any form whatsoever, including photocopyers and information retrieval systems.

CHAIRMAN'S INTRODUCTION

Welcome to our handbook for
the 2019 season.

Whatever level you race at and in whatever class, we are here to help you enjoy your racing. Within the handbook there is enough information for novices and experts alike to gain the most from our world of model motorsport. Enjoy your racing and remember one thing; we cannot all win, but we all can be winners.

What do we do?

Essentially we race radio-controlled model racing cars, trucks and bikes. However this isn't as simple a statement as it might seem!

There are over 13 different classes detailed in this booklet ranging from small electric powered ones that do about 30mph through to cars powered by 3.5cc internal combustion engines that do over 80mph and even those with 23cc engines.

The racing caters for people from all backgrounds and doesn't discriminate on sex, age, or disability. Radio-controlled model motor racing does provide a challenging sporting environment where the skill required to drive and build the cars can be tested against other like - minded competitors.

Where do we do it?

The short answer is everywhere. It's quite likely that there's a club somewhere near where you live. The best method of finding your local club is by contacting your local model shops, or five minutes spent on the phone or internet, or go to www.brca.org and the club listing. These sources can open up a whole new dimension in fun model motor sport.

Who are we?

The British Radio Car Association has produced this booklet. We are a group of radio-control (RC) racing enthusiasts whose aims are best summed up by objective No.1 in our Handbook

'To promote the construction and racing of radio controlled cars'

In this booklet you will find information on all the racing classes we organise and promote. We hope you will come racing and want to join us.

Please remember we are all unpaid volunteers doing what we can for model car racing. Many of the BRCA Officers have career and family commitments, so if the response isn't quite as quick as you'd like... keep calm and take a moment!

John Russell

Acting Chairman, British Radio Car Association





BRITISH RADIO CAR ASSOCIATION

To keep up to date with what's going on in the world of Radio Control Cars visit the BRCA main website at www.brca.org

A screenshot of the BRCA website homepage. The top navigation bar includes links for HOME, CLUBS, EVENTS, MKGP, JOIN, CONTACT, and a LOG IN button. Below the navigation is a large banner image showing a radio-controlled car on a track. The BRCA logo and name are prominently displayed on the left side of the banner. Below the banner is a secondary navigation bar with links for SECTIONS, RESULTS, RULES & DOCUMENTS, SMART SEARCH, and MORE. A 'YOU ARE HERE:' breadcrumb trail is visible. The main content area features a large graphic for 'LMP1 nationals 2018/2019' with a Union Jack background. To the right, there is a section for '1/13TH CIRCUIT' dated 12 DECEMBER 2018, titled '2018-2019 LMP National Round 3 Race Report'. Below this is a 'RACE NUMBERS' section showing several white dice with numbers 1, 2, 3, 4, and 5.

COMMITTEE & CONTACTS

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Acting Chairman

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Section Officers

Each section also has its own officials - see 'Sections and Section Officials' on pages 20-55.

FELLOWS OF THE ASSOCIATION

The BRCA honours members who have made an invaluable contribution to life within the Association by making them Fellows of the Association.

Jeff Lindstrom
Maureen Smith
Paul Pagdin
John Robinson
Bob Errington

Muriel Russell
George Land
Kieth Plested
Eric White
Dennis Jones

Bob Harley
Mike Chilvers
Jacquie Rowcliffe
Mick Hill
Richard Stitson

Chris Hardisty
Janet Hill
Brian Harris †
Ted Longshaw †
Tom Martin †

THE STRUCTURE OF YOUR SPORT

How it all works . . .

In this article we will try to give you an insight how the association is structured, what's available, who to ask, and how problems are dealt with. It's often heard 'The BRCA do nothing for me'. This can normally be translated into two areas - I don't know what the BRCA does for me and - I don't know how to get the BRCA to do something for me.

The first point to remember is that there isn't any great big organisation anywhere pulling the strings. We don't have plush offices, company cars or expense accounts. We do have a collection of unpaid volunteers who give up their time to ensure that our sport continues to grow and be run in as co-ordinated a manner as possible for us all to enjoy.

Making it work for you

This is really simple, all you need to know is who to contact about what. Outlined below is the information you need. Firstly ask yourself a question - is my problem directly to do with the class of car I'm racing or planning to race? If the answer to that question is a 'Yes' then start your request for information with the Section Secretary that deals with your class. If the answers 'No' then read down the list of officials in the handbook and aim your question at the one whose tasks seem closest to your problem, if its not them they will know who to ask.

The Committee Structure

The association is constructed around 2 distinct committee structures.

SECTION COMMITTEES

These deal with the running of the national competitions and the managing of all the rules for the class they represent. E.g. the 1/10 Electric Circuit Committee run the national championships for that class and manage the sectional annual general meeting where YOU, as a BRCA member, propose and vote on both the rules, and the people you want to manage them for you.

If you have a question about a particular class of racing the best course of action is to find the section secretary for your class and give them a call or send them an email. It is section officials who deal with all aspects of the racing conducted within that section. If you have a question, complaint or wish to appeal against a decision, you must start with the section secretary, and the matter will be discussed at their next committee meeting. If they feel unable to deal with it or you are not satisfied with their response then it can be referred to the Executive Committee to deal with.

THE BRCA EXECUTIVE COMMITTEE

The executive committee is made up of 2 people from each section (normally the section Chairman & Secretary) plus the people outlined below. The Executive Committee meets about 6 times a year to discuss how the Association business is progressing, what we need to do for the future of our sport, how each of the sections are progressing and to discuss anything they would like assistance with.

THE ACTING CHAIRMAN, JOHN RUSSELL

John will deal with any query that one of the other committee members hasn't been able to deal with or has referred to him; don't start here unless you feel the issue is very complicated or very delicate.

THE VICE CHAIRMAN, JOHN RUSSELL

John is essentially the Chairman's right hand man; his role is to assist the chairman as necessary, so he will be delegating tasks to himself and lots of other Exec Committee members.

SECRETARY, DARREN NEWTON

Darren is the person to whom all correspondence, other than membership information, should be sent. If you have an item for discussion at an Executive meeting send it here. Address: Unit 24, Wolseley Court, Staffordshire Technology Park, Stafford ST18 0GA.

TREASURER, JIM SPENCER

Jim deals with all aspects of the association's financial arrangements, the administration of the insurance, relationships with the RACMSA and the sports council. If you have questions about these issues speak to Jim.

PUBLIC RELATIONS OFFICER, ALAN LEIGHTON

The Association's public relations (PR) activities are co-ordinated by Alan. Alan represents the sport at several shows a year and ensures that the sport is represented in the best way possible. If you want some help promoting the sport locally, ask him.

MEMBERSHIP AND CLUB LIAISON OFFICER, GRANT WILLIAMS

Grant is our Club Liaison Officer, dealing with the queries from clubs and visiting them up and down the country. The query could be any subject that doesn't obviously fall under the roles above, from help with access to financial grant information through to problems with a member's behaviour and anything in-between.

EDITOR, PETER WINTON

Peter posts to the BRCA website and puts together the BRCA Handbook and the Section Handbooks. If you have something to tell the RC world through our website, or have found an error in our publications or website, get in touch with Peter.

CHIEF TIMEKEEPER, GARETH BEVENS

Gareth oversees the timekeeping for all the major international race meetings the association organises (IFMAR & EFRA events) and also is the section timekeeper for national's in two classes. Got a query about the details of timekeeping? Ask Gareth.

ELECTRIC BOARD / SECRETARY, PAUL WORSLEY

The Electric board is a sub committee organised to ensure parity of equipment between the electric racing classes, check out their published lists of homologated equipment on www.brca.org or contact Paul with any queries the lists don't clarify.

SAFEGUARDING OFFICER, MARK TRINDER

If there is anything that you are unsure about with regards to safeguarding issues, information and guidelines for you from relevant authorities, Mark is here to ensure that all members, young and old, club, regional or National, are catered for.

EVENTS OFFICER, CHRIS JEFFEREY

Chris works with the section committee's to ensure their events are on the association calendar and the online entry system (where applicable) he'll also assist clubs to advertise their regional and special events too.

Doing your Bit!

Remember that the BRCA is only a collection of volunteers all doing their bit to ensure our sport continues to grow and develop, you should be proud of the fact that this collection of people are recognised as running one of the most respected RC Car Associations world-wide. However the most important point is this - all Officials are just ordinary racers who give their time for the sport they love, they are no different from anyone else, and all members should consider what they are putting back in to the sport. You should all help out in some way, at some level. It doesn't matter if its putting the track out at the club or organising a world championship, your contribution is at least as important as any of the other people involved in OUR sport.

THE STRUCTURE OF YOUR SPORT CONT..

Ask, don't guess!

One of the wonders of the internet age is the speed with which information can now be transmitted; this is great if the information is accurate and a major problem when all too often it isn't. No official in any section minds the phone call or email asking 'Can you clarify...'. That sort of call can save hours of frustration all round, so if you're not sure (especially if it's something you intend to circulate) please use our contact system www.brca.org/contact - if the person you ask doesn't know they will know someone who does!

Changing a rule

First bit is a simple statement - The BRCA doesn't create rules. The Section Committees don't create rules. The Membership creates the rules and the Officials you vote in enforce them. Any one of us (you, your club mates, an official - any of us) can change or create a rule. Or more accurately we can 'propose' a rule or rule change. This is done annually at the Annual General Meeting (AGM) for each racing Section. If, when your proposed change is raised at the AGM, the majority of those present agree with you (after the matter has been explained and quite possibly discussed - even possibly amended) then a changed or new rule goes in the book - it's as simple as that.

But

You need to know how to make that process work, so here goes:

Firstly; discuss it with other racers at your club, especially those that might have been to a few other clubs or raced in other classes. They may well come up with an observation that's of benefit, or let your idea get kicked around on one of the discussion forums on the internet. Secondly; is this something that you only need to change to suit your club?

All too often a discussion comes up about a club class and 'the BRCA rules say... ' gets quoted. A couple of pointers here - the BRCA General Rules are the only ones that MUST be adhered to at your club. If you want to modify or even create a set of rules for the classes of cars your club wants to race that's perfectly fine - after all that's exactly where most new classes come from.

So if you've got this far, you have a new rule proposal to make, you've not been shot down in flames by your club mates, and it's something that needs changing for the class nationally or the sport as a whole. To make this change this is what you need to do.

If it's a change to the Constitution or the General Rules write to the BRCA Secretary. Write your change down clearly, noting the existing rule number (if applicable) and stating your membership number and have it 'seconded' by another member who also wants to see the change happen.

If it's a change to the rules for your class, (or for the Electric Board) it's exactly the same procedure but write to the Section Secretary for your class or the Electric Board Secretary.

Try and get to the AGM, all too often good ideas get buried because the proposer isn't at the meeting to explain and discuss their idea.

Don't leave any of the above until the last minute, proposals need to be received well before the AGM, at least a month for the Main Association Rules, and you'll need to check with Section Secretaries when they want to receive rule proposals by.

BRCA

BRITISH RADIO CAR ASSOCIATION

RACE NUMBERS

WE HAVE REFRESHED OUR RANGE
OF RACE NUMBERS FOR 2019

50mm
BLACK NUMBERS
ON WHITE

#1-10
£30

ROLLS OF 100 = 1000 NUMBERS

#1-6
£20

ROLLS OF 100 = 600 NUMBERS

NEW
65mm
BLACK NUMBERS
ON YELLOW

#1-14
£45

ROLLS OF 100 = 1400 NUMBERS

Order via www.brca.org

Prices include postage, allow 3-4 days for delivery.

For Assistance go to www.brca.org/contact

BRCA CLUB MANUAL

Thinking of starting a club?

Running a club already?

Want some help and advice on how a club should be run?

Then get the new BRCA Club Manual. Produced by those who run clubs for those who run clubs, and it's available free!

The BRCA Club Manual is available as a free download from the BRCA website (www.brca.org) in PDF format together with an appendix on safety signs as an Excel spreadsheet! This is to ensure that formats are easily accessible by all, also assuming that you may need to modify safety signs to suit your particular requirements. To read a PDF file you will need Adobe Acrobat Reader, this is a freely available download off the Internet if you haven't already got it (www.adobe.co.uk)

Please bear in mind that this document isn't designed to teach you how to suck eggs, there is a considerable amount included that you hopefully already know. It would be surprising if there weren't something new to everybody, certainly many of us have learnt a lot from researching some of the topics.

It's a sad reflection of our times that this sort of thing is even necessary but we are seeing an increasing trend towards the 'sue now ask questions later' mentality and it's important that you understand exactly what you're taking on and how to ensure you protect yourself if it goes wrong.

You will read about activities being cancelled because people 'don't want the responsibility'. This isn't anything new and certainly isn't anything to worry about. Remember we're doing nothing different to anybody who went before us, it's just that the world is more aware of what that actually entails.

Take your time to read the Manual, or certainly the relevant bits to you, and send some feedback. It's down to us all to ensure our sport progresses and your bit of info and help could save somebody else time, money or having the accident or systems failure you did.

The document is intended to be updated, and news of these will be on the BRCA website.

Jim Spencer

BRCA Treasurer/Club Manual Editor

GUIDE TO CLUBS

Everyone in every sport starts at a local club whether they run, cycle, play ball sports or shoot arrows as an archer. Club racing is also the life blood of the BRCA and where every British racer who has won a National, European or World Championship started their racing career.

With over 200 active clubs all over the British Isles there will be one near where you live. Each club will race one or many of the BRCA model racing classes. Clubs with tracks in halls, schools and sports centres will race the electric classes. Clubs with outdoor facilities will usually race the bigger electric classes and the IC (internal combustion or gas engine) classes. Some clubs have tracks the envy of the world that are, in model terms, the equal of Silverstone, Brands Hatch and Welsh rally stages!

Our website - www.brca.org - will have a list of the clubs affiliated to the BRCA. Use the contact details for the racing Sections in this handbook to ask someone about a club, or contact the Club Liaison Officer (clubliaison@brca.org) and ask for information. Your local model shop will know these clubs and others who regularly meet in your area. Social media is also worth searching for interest groups who can be contacted for information.

Your local club is the best place to see model motor racing in action. Join the club and the BRCA when you have decided to take up our great sport. The club will have racers who can give you advice and tips to make your racing the best it can be.

Grant Williams joined the BRCA in early 1992 while racing Off Road Rally Cross Buggy's at the Rossendale Models Car Club. In 1999 he became interested in 10th IC on Road, he became PRO of the section and then he went on to serve for 3years as the 10th IC on Road as Chairman.

Grant is in contact with clubs as he is the Club Liaison Officer. Part of his role will be to seek what the club membership needs and how to make changes to cater for this. Please contact him to discuss your ideas or invite him to your club.



THE SERIOUS BIT - INSURANCE & THE RC RACER

The Treasurer of the BRCA is responsible for the administration of the public liability insurance for our membership. He is quite regularly asked details about why it's necessary, what it covers, and why its becoming a really important area of today's society and how it effects YOU. The most important point is what it is for: Public Liability insurance covers the individual or club against claims made against them for injuries or other damage caused to members of the public i.e. any other racer (who at that moment isn't involved in the race), a spectator, or other bystander or property belonging to them.

It is a sad fact of modern living that an 'accident' is no more, they just don't happen any more, we now have 'incidents' and 'incidents' are always somebody's fault. You might think this is to allow solicitors to make a living, and for people to think about ever more amazing ways to get 'compensation'. Nearly every day we see adverts on the television for specialist legal firms offering a 'no win no fee' service for compensation claims and for injuries received. These 'experts' are the people you end up dealing with when things go wrong.

RULE NUMBER ONE - Model Car Racing is Fun.

RULE NUMBER TWO - Fun does not mean irresponsible.

Is it really necessary?

Well, that depends on your outlook doesn't it?

Insurance is only necessary when you need to use it. However, there are about 15,000 racers in the UK, plus countless thousands just using RC cars for fun. We deal with about 4 cases in an average year for the BRCA membership of some 8,000, so the odds are about 2,000 to one that you will be involved in accident in the next twelve months that results in an insurance claim.

Pretty low, but if you have a go on the lottery that's 14,000,000 to one!

A race director / club chairman will insist that you produce your membership card, or prove that your insurance is valid, before he lets you race. Can you imagine the problems for him if he allowed someone without insurance to compete and injury to a member of the public or another racer happened?

Remember, it is their responsibility to ensure that they and the club and all the racers present are insured and all protected from personal liability - they are not being awkward they are being very sensible indeed. Respect it - or race somewhere else or not at all. If the sport ever became uninsurable then there wouldn't be any racing as nobody (in their right mind anyway) would be willing to put the events on or run a club for it.

The Cover is:

Public Liability Insurance of £10,000,000. That includes: Cover for use: anywhere at any time in the UK.
Cover as an organiser as well as a competitor.
Cover for organisers no matter where or when the event is held in the UK.

Always:

Use your car in a responsible manner. Never use it somewhere the Law (or local Bylaws) don't allow - the street being the normal one seen. If in doubt as to the suitability of a site, go with your doubts and go somewhere else.

How it affects who: The Fun User

You may be thinking 'I don't race therefore I have no problem'; please think again.
Tracks have to have a barrier / fence so the cars are restrained from getting to the public and visa versa, driving one in the park has no safety features. There is nothing to stop the car if you get interference to your RC equipment and there is nothing to stop the people who haven't seen or heard what you are doing getting

the way. This is probably why there are more accidents involving relatively slow, but quiet, electric cars than the fast, but noisy, internal combustion (gas) cars. In this kind of situation it is always the responsibility of the user - you are directly responsible for your, and your car's actions.

The Club Racer

Most claims result from club meetings. They are normally of the type where somebody's car has left the track and injured, in a relatively minor way, another racer or some equipment or some part of the event hardware (rostrums / staging etc.) has failed. The injured person or venue owner then claims for loss of pay or repair costs and any inconvenience.

See the bit about club chairmen to see how and where the responsibility lies, but don't forget that YOU the racer is where the initial claim will start. Just because someone else is organising things doesn't mean that you are not responsible for your own actions.

The National Racer

Claims resulting from Nationals are generally an exaggerated version of the club types. The accidents tend to be faster and more severe for two reasons; the cars are travelling faster and there is normally an enhanced safety fence / safety procedure which the accident has managed to overcome. However there are proportionally less claims, probably because the safety systems manage to contain 90% of the problem. Again the ultimate responsibility is the race organiser/ BRCA Steward, but as with the club racer the individual is always responsible for their actions.

The Race Director / Club Chairman

This is where the buck stops. At all meetings other than Nationals where the rules state 'BRCA Steward' all claims will involve the Club Chairman or the Race Director. In the event of any claim this person will be involved, as he is the person deemed to be liable for the safety of the event and the persons taking part in it. (This is the same in any other sport or public event). The race director must be satisfied that everyone is in a safe environment and that additional hazards are not allowed to be created i.e. Closing a track / stopping a race if a track repair is urgently required. However most of the time, the race directors / club Chairman's role is just to confirm the basic facts about the accident, to collaborate the claim and to confirm any other issues that may have had a bearing on its outcome.

Big Meetings - Nationals & Above

The buck here rests securely with the 'BRCA Steward' that is the highest ranking committee member present. It is their responsibility to ensure that all 'reasonable precautions' are taken to ensure the racer's and the public's safety. If they have any doubt they will halt the meeting until the problem has been resolved. Again the potential problems are just increased from the club situation with the added questions that large numbers of the public can cause.

Marshalling

At all the above meetings (apart from the fun user of course), marshalling is an accepted part of our sport. We race and then we marshal is the built in ethos, though of course ability and age are sometimes taken into consideration.

It is also accepted that racing tracks, of all sizes, are dangerous places to be. However somebody will determine a safe place to marshal from (it may be self determined at a club or by an official at a National - it doesn't matter) while you are at your marshal post/point the insurance cover applies. But when YOU decide to leave that post and retrieve a car then do be aware that YOU have made that decision - it's then your responsibility to keep yourself safe.

THE SERIOUS BIT - INSURANCE & THE RC RACER CONT..

You cannot blame and therefore claim off yourself, when you get it wrong. If you read nothing else in the Handbook, read the General Rules (page 58-60).

Race Equipment (batteries, motors etc.)

There is only ONE BRCA rule regarding equipment that is applicable to the insurance cover. General Rule 13, Vehicle Scope - The BRCA will not recognise a model vehicle as being suitable for radio control that is more than any of these measurements; 1 meter long, 20kg in weight or a maximum of 30cc engine capacity.

That's It.

All too often we get emails / phone calls - sometimes from quite experienced people - asking (for example) "will the use of XYZ non homologated batteries invalidate the insurance"? Nope. Homologation lists are for Nationals and Sanctioned Events use. A club can choose to run to them if it so wishes, but that's up to them, but either way round they have no effect on the insurance cover what-so-ever at any level of event, including the nationals too - failing scrutineering wouldn't invalidate your cover for example. Anybody tells you different point them at this document or ask them to check.

Getting this cover

If you're reading this as a BRCA member you already have it, if not then read on:

You may already have it anyway, if you have public liability insurance for anything else it may possibly cover you, but please check as most of the time it will not, and ensure you mention 'Radio Controlled Cars' and not just 'Model Cars' as there is a huge difference to the insurer!

It may come with the building your club hires; if it does it probably only covers the racers whilst in the building. Sounds daft we know, but the club members concerned need to know they have no cover when using their vehicles elsewhere.

Insure the club. This works fine and most high street brokers can arrange this. Ensure that the club members are covered as individuals (see points above) and be careful if it appears cheap.

One local club found out in the worst way that their cover was as a 'model car club'; i.e. for building plastic kits and not for 'Racing Radio Controlled Model Cars'.

Join the BRCA as an individual, or by joining an Affiliated club, or by Affiliating your club. We are not insurance experts but our brokers are! You are now insured to use / race your vehicle anywhere in the UK.

Club Affiliation

To be sure that a Club is protected in the event of an accident at the club, Clubs should register with the Association and insists that everybody who races, officiates and helps run the meetings is an Association Member. The method that they do this is down to them. The club may insist that everybody joins individually through www.brca.org, or the club may do the administration for their members - either is fine.

Contact the Club Liaison Officer (clubliaison@brca.org) for more information or if you have any questions.

The reason for doing this is that the club officials are then sure that they are protected in the event of an accident at the club that results in an insurance claim. (See the other Insurance notes for further details).

Insurance is a spectacularly boring part of our exciting sport, but it is vital to its continued success, and it isn't a subject that is going to go away. At some point you will either be involved or see something that will make you realise its worth, just ensure that you realise how worthwhile it is AFTER you have it.

Public Liability Insurance Insured:

1. The Committee, all permanent & temporary members of the British Radio Car Association each of whom is separately insured.
2. The cover includes the use of all classes of radio controlled cars & motorbikes anywhere in the UK and whilst temporarily abroad in Europe. (the host club should provide cover).
3. Member-to-member liability is included for both personal injury & property damage, but excludes damage to models, radio gear & ancillary modelling equipment.
4. Demonstrations & displays sanctioned by the BRCA or Committees of affiliated clubs will be automatically covered. (Demonstrations at school fetes or for charity work etc.)
5. Potential new members to clubs are covered for up to 6 weeks (three meetings) in any one year without additional premium.
6. An indemnity is given to leased premises including land & property owners & to Local Authorities. (Covers damage to buildings and or ground hired by the BRCA. Most public buildings, however, will have their own insurance cover, which will be part of the hire contract.)

Policy Details Insurers: Just Motorsport Policy - 797944

Limited Policy Number: UC CMK 3961159

Period of Insurance: One year

Limits of Indemnity: Public Liability £10,000,000

Territorial Limits: UK, Northern Ireland, Channel Islands, Isle of Man

Policy Excess: £500 Third Party Property Damage

**SHOULD YOU HAVE ANY QUERIES REGARDING INSURANCE
PLEASE CONTACT THE BRCA TREASURER - JIM SPENCER ON**

01270 842043 OR 07976 623772

BRCA ELECTRIC BOARD

The BRCA Electric Board will be known by the acronym of - EB.

Secretary & Eligibility Officer for Motors & Batteries:

Paul Worsley - paul.g.worsley@gmail.com

Eligibility Officer for Electronic Speed Controllers with Zero Timing:

David Gale - david_gale@msn.com

The BRCA Electric Board (EB) was formed at the end of 2000. Within the BRCA there are different Sections that use the same electric items, which prior to the forming of the EB had to comply with varying rules within the Sections. The prime objective of the EB is to formulate a common set of rules, specifications and fix maximum prices for the BRCA Electric Sections where they choose to use such items. Officers of the EB also liaise with the major International organisations within our sport, in an effort to achieve common rules and specifications that apply to International events.

The EB committee comprises of members from each of the Electric Sections that support EB procedures. This way, any proposed changes to rules are evaluated to ensure that the changes do not have a detrimental effect on any particular Electric Section. This is the only area of the BRCA that doesn't take proposals from individual members.

The EB supports the Sections so all proposals come from those Sections when required. This process ensures that the BRCA Electric Board provides these Sections with essential areas of support for their drivers, by having common rules and procedures.

The EB committee has regular contact with distributors and manufacturers to research any changes to products and also to investigate the possible impact of new technology. Our contact base spreads worldwide to gain the knowledge we require.

We have common rules for the technical specifications of motors and batteries through the EB's close co-ordination with other International Associations. As a result of many years of this work, often led by the BRCA EB, we have the same technical rules in the BRCA, EFRA and IFMAR.

British drivers entering International events can usually use the same equipment purchased for BRCA events. Whilst the approval procedures for the International Associations are similar to BRCA procedures, the dates of approval may



differ and manufacturers may not submit all of their products to all Associations for approval. That leaves some exceptions, so you must check with the Rules and Approval lists for any International event entered.

The EB, through testing and knowledge, recommends certain ways to maintain and improve safety. Members must check the EB and General Rules to ensure they comply with these areas. This is for the safety of our members and those around them when using their RC vehicles. Most importantly, all LiPo batteries must be contained in a safety sack or suitable container during both charging and any discharging procedures (other than when being used in a race) and the charge rate should not exceed 1C (charge at no more than the stated capacity on the battery).

All motors, batteries and speed controllers have some form of rules controlling how they are designed and made that apply to National and International competitions. The EB checks new products against these rules. Conforming products are added to lists called 'Approved Lists'. Drivers at BRCA sanctioned events – Nationals and Regionals typically – may only use the products on the 'Approved Lists' and the driver may not modify them; approved-list products must be used as sold and as described on the Approved List.

APPROVED LISTS - UPDATES.

Batteries:

The Approved lists are updated twice a year (see the EB Rules for details of this).

For Sections whose National series' are run in the summer months, the battery list is updated in December to become effective the following 1st. April.

For Sections racing in the winter months, the list is updated in July to become effective on 1st. September.

Motors:

Motor lists can be updated at any time during the year, whenever a new motor is passed by the EB.

Updated motor lists are only published on the Monday of any week following approval, to ensure all competitors have time to evaluate prior to an event.

Speed controllers:

To be used in the zero-timing or 'blinky' classes. The approved list can be updated at any time during the year, whenever a new product passes the software checks. Publication of any updates is only on the Monday of the week following approval.

Paul Worsley

Electric Board Secretary

FREQUENCY INFORMATION

What frequencies are available?

The frequency bands available for the use of radio controlled model cars are shown below together with the maximum effective radiated power output of the transmitter measured in milliwatts.

| Frequency | Use | Effective Radiated Power |
|-------------------------|---------|--------------------------|
| 26.96 to 27.28 MHz | General | 100mW (max) |
| 40.66 to 41.00 MHz | Surface | 100mW (max) |
| 2.4 GHz Spread spectrum | Surface | 100mW (max) |

27MHz

The 26/27 MHz band is also allocated for other low power telemetry and telecommand devices as well as model control. The 27 MHz Band was one of the first two radio control bands approved in the U.K. It is shared with several other users, including C.B. Radio. Because of possible interference from other users, it is not recommended for aircraft or other models where interruption of control of the model is likely to be a safety hazard.

40MHz

The 40 MHz band is solely dedicated to surface modelling. It consists of 38 channels with a 10 kHz channel spacing, the centre frequency of the first channel being 40.665 MHz. The last channel has the centre frequency of 40.995 MHz. All crystals must be used with the 10kHz spacing and end with 5. The centre frequencies are 40.665, 40.675, 40.685 and so until 40.995.

2.4GHz

The 2.4 GHz spread spectrum is a 'shared' band where the transmitter and receiver negotiate an exclusive channel for the duration of the transmission. This band is also open for by other equipment such as WiFi.

These are the 3 main bands that we use in racing. Please check out the UKRCC at www.ukrcc.org

For licensing and further reading go to:

stakeholders.ofcom.org.uk/spectrum/information/licence-exempt-radio-use/licence-exempt-devices/ofw311

Although there are other frequencies available they are not supported by major manufacturers and their use is difficult to police. The use of any other frequency is specifically not allowed for the control of model cars operating within the rules of the BRCA. Any modifications to transmitter and/or receivers is strictly not allowed. External power supplies to the transmitter are specifically not allowed.

Recommendations

The use of 27 MHz band outdoors on the larger scale (1/8 and 1/5) cars with IC engines is not recommended unless a fail-safe device can be fitted. It is preferable that all cars use PCM type receivers with the fail-safe operable and set correctly. All elements of the radio equipment be purchased from and maintained by reputable suppliers that are capable of providing some form of certification that the equipment is designed for the use you will be putting it to. At race meetings a channel separation of 20 kHz is preferable. Transmitters should only be switched on when on the rostrum. Crystals are easily damaged and should be tested or replaced at regular intervals. Storage and transport of the equipment should be considered, 50 miles loose in the boot of the car does more damage than falling off a pit table!

THE SECTIONS

THE FOLLOWING PAGES CONTAIN INFORMATION ABOUT OUR RACING CLASSES.

Each Section's Construction and Racing rules are available on the BRCA website at www.brca.org - click on the section heading and select the class you are interested in. All these Rules are created and voted in by the Section members, for our current National Championship Series.

These classes have changed over the years and continue to evolve, through input from the current competitors.

Always remember that every class listed at some point started as a few racers at one club creating something new, by generating interest in their new idea it grew over time until what you see here exists.

The class you are racing at your club may well be that new idea that one day will become the class that thousands of people are racing IF you make sure that your good idea get circulated. If you find something that works make sure you let the rest of the racing community know.



8th CIRCUIT

Model cars come in many different shapes and sizes but with acceleration times of 0 to 60 miles per hour in less than two seconds, and top speeds in excess of 75mph is it any wonder that 1/8th gas powered radio controlled model cars are considered the formula one of all radio controlled model car racing? Racing 1/8th circuit radio controlled gas cars will add a whole new meaning to your understanding of the word excitement.

Once you have driven a 1/8th car and experienced its awesome power, and stunning cornering speed, you'll never be satisfied with driving anything else, and be back for more, again and again and again.

Your 1/8th scale I.C. powered four-wheel drive car can be built from one of the many

available kits now on the market. Powered by a racing 3.5cc two stroke engine capable of delivering over two brake horsepower, you are just minutes away from the most mind-blowing experience in model car racing.



Your car complete with engine will be a high tech 1/8th scale model racing car. All cars have front and rear independent suspension controlled by fully adjustable shock absorbers and springs. In addition you'll have disc

brakes and automatically shifting transmissions. All this

topped with a sports car style bodyshell painted to your own individual team colour scheme and designed for you to get the best from your car both mechanically and aerodynamically.

1/8th racing is a great activity and hobby for all the family to participate in, and as well as racing as individuals, many father and son teams compete in racing events. Once you've got used to the thrill of driving your own car around one of the purpose designed scale circuits located throughout the country you'll be able to compete in your first event. Following a practice session you'll have tuned your car and engine for maximum performance. With your engine running you head for the drivers rostrum, whilst your pitman puts your car on the track for one of your qualifying races. Having qualified for a final you wait on the drivers rostrum as tension mounts waiting for the flag to drop. Accelerate hard into the first bend as you jockey for position with your fellow racers.

As the race settles down you'll have to think about the first of your scheduled re-fuelling pit stops. Head down the pit lane to your pitman, a full tank of fuel taken on in seconds, and you blast back into the action. Well, could you handle it? If the answers yes, then come 1/8th I.C. racing!



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8th RALLYCROSS

1/8th Rallycross racing is fast, colourful, action packed and extremely competitive. With racing at actual speeds of around 50mph, on a variety of surfaces, the racing action is guaranteed to be exciting. 1/8th Rallycross (or Off Road) is one of the most popular classes of model car racing.

In recent years the popularity of the nitro engine has increased immensely, and as a result, Rallycross has seen many new drivers start racing and indeed many drivers from other classes have been converted. Rallycross is considered to be one of the friendliest class of model car racing. Whilst on the track the racing is very competitive between all drivers, however, once back in the pits, you will often see drivers of rival cars openly helping each other and generally having a laugh and a joke.



The cars that are raced are all four wheel drive powered by a 3.5cc nitro fuelled engine with double disc brakes to bring them to a halt. All feature fully independent suspension, which is adjustable to suit the driver and track conditions. With different spring tension rates, damper settings, anti-rollbars settings, and adjustable suspension geometry to fine-tune the car's handling. Different tyre patterns and compounds complete the set-up.

The construction rules laid down by the BRCA limit the fuel tank size to 125cc. This gives sufficient fuel to race in the 5 minute qualifying heats, but

with finals of 20 or 45 minutes long, it is necessary to have fuel stops. For this you need to have a good mechanic to re-fuel your car, and with the closeness of the racing some times the finals can be won or lost on the pit stops. One of the nice things about Rallycross racing is that you can buy, off the shelf, exactly the same specification equipment that the top drivers are using. This in turn leads to a very level playing field, and it is the skill of the driver that decides the winner.

The BRCA runs a National Championship, which is open to any member of the BRCA. Within this National Championship there is a Clubman's Championship, a Junior Championship and a Over 40s Championship. All drivers are entered in the National Championship, however, the top 24 drivers from

the previous season and any driver who makes more than 1 "A" final during the year is not eligible to compete in the Clubman's Championship. Junior drivers must be under the age of 16 on the 1st of January of the current season.



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STOCK CARS

1/8th Stock Cars are a radio controlled model car section of the BRCA. This section of model car racing is the oldest form of radio controlled oval racing, having been around since 1973. Based on the full size BriSCA F1 formula, the section follows the same rules as closely as possible, with car specifications closely scrutinised, colour coded/driver graded race starts and the encouraged use of legal contact ensure it remains one of the most exciting and competitive forms of RC racing around.



Cars are put together by drivers using a steel chassis frame, RC steering & throttle servos and nitro fuelled single cylinder 3.5cc engines provide the power, which is delivered to the rear wheels by a belt driven single beam axle.

There are clubs spread across the UK and Holland, where all tracks have purpose built racing facilities with computerised lap scoring systems which work with transponders fixed to the cars. Tracks are oval in shape with an infield and outer steel plate barriers, surfaces are tarmac and typically range from 30-40 meters in length.

Meetings follow a similar format to the full size formula, whereby drivers take part in heats with the aim of qualifying for the meeting final. A consolation race is held as a "last ditch" effort to gain a place in the final and any drivers that don't make it through to the final or consolation can compete in a Grand National race.

During regular meetings drivers race in 4 heats consisting of up to 6 cars, with each heat lasting 4 minutes. After this "heats round" the top 4 drivers with the highest scores (based on their top 3 best heats) qualify straight through to the meeting final. The next top 6 drivers battle it out in a 4 minute consolation race, where the top 2 win places in the 5 minute final. Some clubs run a Grand National race for the next 6 drivers who finish outside the original top 10 from the heats.

The difference between a 1/8th meeting format and full size is that in 1/8ths, your heat scores are based on how many laps you complete during the race and not your position at the end of the race (however this rule does not apply to the knockout rounds of a championship meeting, see next paragraph).

Championship meetings are where things get tougher with the addition of knockout rounds. Drivers compete in heats as per the club meetings, however the top 24 drivers then get seeded into quarter-finals. The top 3 from each quarter final then get sorted into semi-finals, where again the top 3 from each race qualify for the championship final. Grand Nationals are not contested at championship meetings.

Much like other oval racing formulas, 1/8th stock car drivers are given a grade which reflects their ability. A driver's grade is based on their positions during races; each position is awarded a certain amount of points leaving a driver with an overall points haul per meeting. The season is split into three grade periods, with drivers going up

or down the grading table at the end of each period. Grades are displayed by the colour of a driver's car roof/wing: white for the lowest point scorers, then yellow, then blue, then red and finally superstar. Special roof colours are awarded to drivers who win championship titles.

Drivers can also win titles at club and regional level, as well as trophies being presented at the end of the each season for things such as grade awards (best blue never red, for example).

In short, 1/8th stock cars are an extremely fun and affordable alternative to BriSCA F1 where anyone can be competitive and challenge for titles, or a perfect hobby for those simply wanting to have a good time at the weekend!



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Race Rep

8th TRUGGY & E8 BUGGYS

1/8th Truggys are similar to 1/8th Rallycross cars but they are wider, longer and have Truck based bodysells. 1/8th Truggy races are held on off road circuits around the country. The tracks can feature all sorts of obstacles such as jumps and tabletops and they are generally made of Astroturf, dirt or grass. Truggy racing is big!! Truggys are fast, fun and exciting.

Truggy drivers are a friendly bunch and many of the top racers are more than happy to pass on tips and advice to even the most amateur drivers. Local Clubs have a wealth of knowledge to help beginners in the sport learn more about their machine. You never stop learning though, so there is always something you can do to improve the way your Truggy drives!



Truggys are all four-wheel drive, powered by a nitro fuelled engine. Engine size is unlimited, but most drivers will run a .21 (3.5cc) up to a .28 (4.6cc). The extra power of the bigger engine will help your acceleration, but the trade off can be higher fuel consumption. With all this speed you are going to want to slow down! Truggys come with a minimum of double disc brakes to bring them to a halt, but some drivers run quad brakes for extra stopping power. All cars feature fully independent suspension, which is adjustable to suit the driver and track conditions, with different spring tension rates, damper settings, anti-rollbars and adjustable suspension geometry to fine tune the cars handling, plus different tyre patterns and compounds to complete the set up.

The construction rules laid down by the BRCA limit the fuel tank size to 150cc. This gives sufficient fuel to race in the 5 minute qualifying heats, but as the finals are either 10, 15, 20 or 30 minutes long it is necessary to have fuel stops. For this you need to have a good mechanic to refuel your car, and with the closeness of the racing sometimes the finals can be won or lost on the pit stops.

You can buy an off the shelf RTR (ready to run) Truggy that will get you almost everything you need to start racing. Alternatively, the Pro versions of many models are the versions run by the very top racers. These kits are more expensive and you have to buy an engine and radio gear, but they will be a higher specification car with stronger and lighter parts. There are also second hand bargains available, check those web sites and magazines!!!



The BRCA runs a National Championship, which is open to any member of the BRCA. Within this Championship there is a Clubman's Championship and also a Junior Championship.

AIMS

To provide a fun and relaxing uniform format for 1/8th Nitro Truggy and other off-road racing Trucks, in an Open National format. The intention is to encompass all commercially available 1/8th Nitro Truggys and other off-road racing Trucks. Electric Truggys will run with Nitro unless enough numbers to run in their own heat.

Chris Jeffery

Chairman - Truggy Section

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10th ELECTRIC CIRCUIT

Hello and welcome to Electric Touring car and F1 racing.

1/10th scale, electric powered touring cars are 4-wheel drive machines capable of speeds in excess of 70mph making them the fastest electric power class. They are made from carbon fibre and feature advanced electronics, making them one of the most tunable classes. F1 is a new class within our section, but they share the same technology as the Touring Cars and are just as tunable.



The national series for our section is divided into 2 different series. The National series over 5 rounds, and the Clubman National over 7 rounds. The F1 class will be run as part of the Clubman National.

Both the National and Clubman National series are run outdoors, with the season running from 1st April to 30th September. All of the venues we visit are purpose built, tarmac circuits. All classes run on a control tyre which ensures a level playing field and reduced cost in tyre selection. The tyre we use is voted on by our drivers before the season starts. We also vote on which tracks we visit through the year, so our drivers have a lot of say in the direction our series takes.

We are an innovative section. All junior entries into our events half price, as we recognise that our young drivers need to be encouraged and nurtured into what we hope will be the world champions of the future. We have changed the National series format from a 2 day meeting, to a 1 day meeting after listening to feedback from our drivers. We have also adopted a brand new class into the National series which has proved popular in Europe. We hope this new 13.5 Blinky class will prove popular, and assist our drivers in competing at the highest level internationally.

Our national series has become world renown for its competitiveness and prestige. This has been thanks in no small part to the will and enthusiasm of club and BRCA officials and also of our competitors, who have countless years of experience and a vast knowledge base to share with newcomers. We like to think of ourselves as a friendly class of RC racing in which you can choose to compete at any level.

Our aim is to organise the biggest and best 1/10th scale Touring Car and F1 National Championships in the world, while giving good value for money. We hope that you will choose to become a part of what we do and come and race with us.

I wish you ever success with your racing this season and hope to see you trackside.

Gavin Clinch

Chairman, BRCA 1/10 Electric Circuit Section



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JAMES GREENER / LUKE LEE / LEE OWEN

F1 Sub Committee



10th IC CIRCUIT

Introduction

In the 1/10th IC Circuit section we race two different classes of nitro engine powered cars; 200mm touring and Sports GT. We race these cars at various on road venues around the UK for our national championship. The championship usually runs from March until October, consisting of 8 rounds with your best 5 results to count. Each round is run on a purpose built racing circuit.

When the national series isn't running, there are plenty of local race events happening at clubs all over the country, enabling you to race all year round. Our cars are powered by 2.1cc engines. We also use foam tyres for more grip and ultimately faster lap times. However on a wet or damp track it may be better to use rubber tyres. Therefore we have an open tyre choice for both our classes. You choose which to run to best suit the conditions. A correct tyre choice and you will find yourself flying up the timesheets, but a wrong one and you could drop a lot of places. It all adds to the excitement of our sections racing. As well as the various engine and tyre brands to choose from, there is also perhaps the most obvious decision of which car manufacturer to go with. There are a range of different brands available, all capable of being very competitive and giving you a great day's racing.

The GT8 class will once again support the main two classes. These cars are 1/8th scale buggies converted for on road use with a GT shell, powered by Nitro Engines or Electric Motor.

Race Procedure

Our nationals are held over a weekend with Saturday being an optional practice day which starts at 9am and the track shuts at 6pm (track dependent). On the Sunday we have a drivers briefing at 8:30 to address any safety concerns and the time table for the day. After the briefing we then go into a round of practice in heat order consisting of 10 minutes of duration.

Next up is four rounds of qualifying heats with a minimum of 2 minute warm up to enable you to get your engine up to temperature and your tyres bedded in which then rolls in to the 5 minute qualification heat. Your fastest round of qualifying will allocate your spot in the final. The finals are of 10 cars in each heat so the top ten go into the 30 minute A final then the next ten will go into the B and so on. All other finals will be 25 minutes long.



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10th ELECTRIC OFF-ROAD

The BRCA 1/10th Off-Road Section promotes and organises race meetings at Club, Regional and National level with the aim to encourage the progress of drivers from level to level.

The pinnacle of the Section is the National Series, (widely regarded around Europe as a “model” for Off-Road event organisation), which provides the results from which the British Team is selected for European and World Championships.

Our aim is to encourage people of all ages to join-in, at whatever level, to compete within our rules and to go home satisfied; knowing that they have been allowed to achieve their best, in an enjoyable and friendly environment.

We race 2WD and 4WD Off-Road Buggies (referred to as “cars” by the drivers), which are designed for many surfaces. Tracks are built on: grass, dirt, astroturf or mixes of surfaces. Their design includes various features that are placed to test the driver’s skill and ability to the full. Humps, jumps, hollows, camber changes and a fast straight make for a perfect day’s racing. Buggies are purchased in kit form from specialist model shops and can be built in a matter of hours. The car will include fully independent suspension with interchangeable oils and springs for fine-tuning to suit any particular track. Rechargeable batteries are used to power a noise free electric brushless motor. Drivers race for five minute periods to achieve their best possible result using both their driving skills and ‘car set-up’ abilities.

The 1/10th Off-Road Section sanctions a variety of events to cater for the skill levels of all members :



Regional Series

The UK (including Scotland, Wales & Northern Ireland) is divided into eleven Regions. Each Region organises a Regional Championship for 2WD and 4WD Classes. Based on the results of each Regional Championship, Licence Grades are awarded for the following year.

Contact details for the Regional Representatives can be accessed from the Section Officers on the BRCA website or in this Handbook.

National Series

This is the pinnacle of Off-Road Racing in the UK. Our more experienced drivers often make the ‘top’ Finals at International events and are regarded as some of the best drivers in the World. The National Series consists of six events in 2WD and 4WD, with each event run over two days. These events are



limited to 120 drivers each day and are often over-subscribed. Entry to the National Series is done directly to the Off-Road Section.



JUNIOR, VETERAN & FORMULA CHAMPIONSHIPS

Where drivers, after qualifying by racing in their local Regional events, gather to compete against other drivers of equal ability from all over the UK.

There are four different Championships, spread over two separate week-ends at two different venues, with 2WD and 4WD Classes on separate days of the week-end. These are organised as follows:

The Junior Championship

Is split into two age groups to produce Champions in the Under 13 and Under 16 categories, (surely destined to be the stars of the future).

The Veteran Championship

Is split into ages of over 40 and over 50 years of age. (The Junior & Veteran's Championships are organised at one venue over a complete week-end).



The Formula Championships

Are organised over a complete week-end for drivers with licence grades of F2, F3, F4, F5. (more experienced drivers with F1 licence grade are not allowed to enter these events). These Championships are primarily for Regional drivers to prove their skills against drivers of similar ability from all of UK. There are two Championships to be decided :

The F2 championship – to decide the best F2 grade driver in UK.

The F3, F4, F5 Championship – to decide the best driver in UK from these combined licence grades.

Attendance levels at all major events in the Section are high. This is a measure of the popularity of 1/10th Off-Road racing. 1/10th Electric Off-Road racing is THE PLACE TO BE for close, competitive and fair racing.

Paul Worstley

Chairman, BRCA 1/10th. Off-Road Section



10th ELECTRIC OFF-ROAD CONT..

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BRCA

BRITISH RADIO CAR ASSOCIATION

RACE NUMBERS

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12th ELECTRIC CIRCUIT

One of the earliest electric RC racing classes in existence, 12th Scale can trace its roots back to the 1970s. Once the only electric RC track class, spawning champions in many other classes, 12th remains immensely popular in its own right, even as other RC electric classes have developed over the years.

With the recent explosion in popularity of the GT12 class, the 12th Section caters for all ages and abilities across club, Regional and National competitions. These well-attended events now cover three classes - LMP12 (where it all started), GT12 and GT10.

Whether you're an occasional club racer or a pro-level driver, the 12th Section has something to offer you and we invite you to come and share experiences with us.

Our Classes:

LMP12

Originally developed in the 1970s, these are now the most highly developed 12th scale cars using the latest in brushless and LiPo technology. Wide tyres and aerodynamic Le Mans Prototype style body shells coupled with powerful and lightweight electronics make for incredible handling capability and impressive speed. A range of motor power classes is available from easy-to-handle 13.5 Stock right up to Open Modified for the speed freaks.



GT12

Smaller and simpler LMP12-style cars with clear rules. Narrower tyres, lower running costs and GT-replica bodies make this the ideal class for club racing.

We organise Regional and National competitions offering a ladder of success for GT12 drivers from their first Club drive to National Champion, all within the same set of construction and racing rules.

GT10

10th scale cars with similar chassis design to LMP12. They use GT style body shells and big tyres, so are typically more forgiving to drive and less sensitive than LMP12 cars. Tyres used are either foam or rubber. The rubber tyre GT10 – WGT-R – is popular here and in the US.



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12th ELECTRIC STOCK CAR

The Cars

All the cars are a reasonable representation of the full size Brisca F1 and F2 stock cars being raced on Ovals around the country.

Unlike other classes, there is no shop ready kit available, but we have a number of racers producing cars built using the construction rules of the Section, and spares are readily available.



Type of Track

These cars are raced indoors on a carpeted Oval Track. There are a numerous Oval clubs up and down the country, most of which can be found in the back of this booklet, and/ or on the BRCA web site.

There is no standard size of track, some are quite small, while others are quite large in comparison, this adds to fun of adjusting you're driving skill to match the track conditions, just as in full size racing.

Racing

Most clubs race on an evening all year round, with heats of up to 9 cars racing for 5 minutes., with 3 or 4 rounds and a final. This is full contact racing, and it isn't necessary to be the fastest, but be skilful in how you handle or avoid the hits that brings the success.

The BRCA National Series runs from February through to October mainly on weekends.

At the Nationals there are trophies at each meeting and points for the end of season trophies for the best drivers. All ages and abilities are catered for and most clubs and venues have disables access. We hold the World Championships and European Championships on alternate years.



Other

One thing that is apparent at stock car meetings, be it National or Club events, is everybody is having fun. There is a serious side to the sport, winning trophies, points and the World Championships, but the main ethos is having fun.

You will not break the bank if you wish to take up this form of radio controlled car racing, for as little as around £300 you could be on the track racing. The best way to find out about these is to visit one of the local clubs that race them.



If you wish to know more take a look at the BRCA web site under 1:12th Stock car, where you will find more details of clubs who race these cars.

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LARGE SCALE OFF-ROAD



The Large Scale Off-Road (LSOR) Section of the BRCA is one of the newest Sections and covers the largest scale of off-road model vehicles on the market with BRCA affiliated Clubs throughout the country. Our national race series is open to any make of off-road vehicle whether that is two or four wheel drive, 23, 26 or 30cc petrol powered. Brakes on our petrol powered models can be a single lay shaft rear brake, hydraulic or air brakes front and rear which all help to stop the large scale cars which are capable of speeds in excess of 50 mph from their two stroke petrol primed engines. As a rule the top end kits are complete with everything apart from radio gear, engine and fuel. Ready to run kits are also available with everything apart from fuel making large scale off road racing available to all. All models can be modified as and when needed to the driver's specification.

The BRCA National Series runs throughout the summer months normally from March until October with our drivers visiting all four corners of the country. When the National Series is over the majority of the Clubs then run interclub meetings over the winter months, giving you all year round off-road racing.

If you would like to join the largest form of model car racing in the world, with Clubs all around the country, then visit the BRCA website for more details on your local venue, pay them a visit and see what you are missing out on.



Our vision statement

To provide as uniform as possible a format for large scale off road RC cars, to be able to compete with one another on an open National basis. The intention is to encompass all driver abilities and commercially available large scale off road vehicles, yet still encourage invention and innovation by allowing "one off" home constructed cars and modification of kit products.

What do we have?

The buggy class has two national championships, 2 wheel drive & 4 wheel drive for vehicles which conform to their respective technical specifications and have separate heats and finals. We also have the open class which welcomes any vehicle which does not conform to the buggy or short course (SC) technical specifications but complies with the BRCA model vehicle scope of not exceeding 1 meter in length, 20kg in weight or a maximum of 30cc engine capacity in its own championship. The open class does not have a national or junior championship. All race classes shall be respectful of the generic BRCA LSOR construction rules and in particular the 2 and 4 wheel drive buggy class technical specifications for the buggy class, and the short course truck technical specification.

Drivers are classified as either a National or Clubman driver, and those under 16 at the start of the year are deemed a junior. Our normal race format is for three rounds of qualification heats to determine the day's qualification positions. Finals are run upon the driver's qualification position and by the end of the day we have our meeting winner. Whilst the National series drivers may be competitive

we have one of the friendliest and helpful series around, so why not come and join us? Not only is large scale racing popular in the UK, with numbers increasing year on year, but also within Europe, there being many opportunities to enter European race meetings.



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The Bike Section is made up of bike enthusiasts who are always keen to encourage more to join their ranks. The bikes raced vary in design but follow common construction rules which keep them in scale and are a fair representation of the full size version. There are 4 different classes of racing, these being:

- 1/5th Stock Class (Moto2)
- 1/5th Superbike Class (MotoGP)
- 1/8th Nitro Class (MotoGP Nitro)
- Sidecar Class



The Nationals race calendar for 2019 will take place between April and October at venues located across the country. These being Adur, Cotswold, Halifax, Mendip and Wombwell. Meetings are always held over a weekend with practice on the Saturdays and racing on the Sundays. The 2019 World Championships will be held in Austria in August and we hope some of our racers will be taking part.

Full details of our race calendar and how to get involved can be found on the BRCA website at www.brca.org or via the BRCA Bike Section Facebook page. Questions can be directed to any member of our Committee or you can come along to any of our National meetings to see the racing up close. The bike racers are very friendly and always willing to help newcomers get their bikes up and running.

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INTRODUCING **CLUBSPORT**

This 'Section' is where the classes reside that you race at your club that don't have, or have only just grown into, or are recently stepping down from, having a full BRCA National Series.



CLUBSPORT

EVERYTHING WE DO HAS GROWN FROM SOMETHING STARTED AT A CLUB BY A SMALL GROUP OF PEOPLE, JUST LIKE YOU AND YOUR FRIENDS, THAT HAS THEN GROWN AND DEVELOPED INTO THE NATIONALS (AND INTERNATIONALS) WE NOW SEE. THIS SIMPLE STATEMENT HIDES A PROBLEM. TODAY, PEOPLE EXPECT EVERYTHING TO BE DEFINED. THAT'S VERY HARD TO DO FOR THINGS THAT ARE NEW, DON'T HAVE MANY FOLLOWERS, OR ARE SHRINKING AND HENCE HAVEN'T GOT THE FULL COMMITTEE STRUCTURE THAT A 'SECTION' REQUIRES.

So 'Clubsport' is the solution. It gives us a place where classes that are growing, shrinking or just small can get the support they need to continue to exist and prosper plus, of course, it ensures that people don't think that the only classes the BRCA race are the ones that have National Rules. That is never the case as can be seen at virtually any club we all race at – they pick and mix the BRCA National classes with other classes that their drivers like.

On the pages that follow you'll see everything from Stadium Trucks to 1/12 Hot Rods, Drifting to Rock Crawling, but it's by no means an exhaustive list. You will almost certainly know, or do, something that's not included here - do tell us about it by contacting us through www.brca.org/contact

Better still write some words, add a picture or two, and we'll help you tell the rest of the membership about it! Send details of the class you race at your club to editor@brca.org with some hi-res pictures and we'll put them up on our website.

If you're running a class that's grown beyond your club and you'd like some help with making it grow further then one of the officials listed in this area will be able to help you with it. Do make the call as it's only by making it that our sport will continue to grow and develop.

Put your information or question to us at www.brca.org/contact and we will get back to you!



Stadium Trucks

Stadium trucks are distinct from other types of off-road R/C vehicles, such as buggies and short course trucks, by their combination of truck-style bodies and open-wheeled layout.



Their appearance loosely resembles that of full scale trophy trucks and short-course trucks. The primary difference is that the tires and suspension components extend far outboard of the body, similar to open wheel race cars. Short course trucks, a similar type of R/C car, much more closely resemble full-size trophy trucks.



Hot Rods & Oval

This class is for the Hot Rods and Bangers, those usually raced on oval tracks like the Stockcars we are probably all familiar with.

Hot Rods, or in some cases the Hot Hatch, is a car slightly bigger than a GT12, but with all the simplicity of the Minis. There is a Hot Hatch series organised by Mardave using six clubs and mixing ovals with circuits, and for £60 for the basic kit they really are affordable pocket rockets.

Bangers are standard road-going cars beefed up with withstand the contact nature of the racing, and are run on ovals. There is a huge selection of bodies available from sellers like Kamtec, and part of the fun is painting them up like the real thing.

Many other specialist clubs run events for Hot Rods and Bangers – search for “RC Oval Racing” on any search engine or Facebook to open a world of low-cost RC racing.

Check out our Club register at www.brca/clubs to find a club near you running Hot Hatch on circuits, or Hot Rods and Bangers on Oval, and go racing!



1/5th scale replicas of saloon and there are rules in place to petrol engines and range from

Other features include hydraulic geometry. All the cars are single grip from the moulded rubber purchased as a complete ready

Drifting

As a motorsport discipline, drifting competitions were first popularized in 1970s Japan. Today they are held worldwide, and are judged according to the speed, angle, showmanship and line taken through a corner or set of corners. The desired line is usually dictated by the judge or judges, who describe their desired line as well as highlight areas of importance, such as clipping zones, clipping points and touch and go areas.

For drifting, the electric drift cars are the ones recommended because they are lighter weight, contain durable motors and easy to manoeuvre. Nitro RC cars have a tendency to overheat the engines when used in a drifting competition.

Radio-controlled drift cars are usually equipped with special low grip wheels so that cars are able to slide easily. Typically, higher end drift cars contain a four-wheel drive machine and made from high quality materials. 4x4 cars are easier to control and are recommended for easy drifting. Some of the popular brands of RC drift cars are those that are supplied by Tamiya and Yokomo.



Large Scale On-Road

cars that race on outdoor tarmac tracks. These include touring cars and FG 4WD Mini's allow a Formula One and Truck class at some clubs. The cars are powered by 2 stroke 23cc up to 29cc depending on the class raced.

disc brakes all-round, oil filled adjustable shock absorbers and fully adjustable suspension speed, starting with a centrifugal clutch through to a limited slip differential to maximise tyres. The tyres come in various grades to suit all tracks & driving styles. The cars can be run kit or a rolling chassis which you can build to your own spec.

Rock Crawling

Rock crawling is an extreme form of off-road driving using vehicles anywhere from stock to highly modified to overcome obstacles. In rock crawling, drivers drive working models of highly modified four-wheel-drive vehicles such as trucks, Jeeps, and "buggies" over very harsh terrain. Driving locations are scaled from real-life areas like boulders, mountain foothills, rock piles, mountain trails, etc.

Rock crawling is about slow-speed, careful and precise driving, and high torque generated through large gear reductions in the vehicle's drivetrain. Rock crawlers often drive up, down and across obstacles that would appear impassable.

Rock crawling competitions range from local events to national series. These consist of courses with obstacles set up with gates, similar to a slalom ski race.





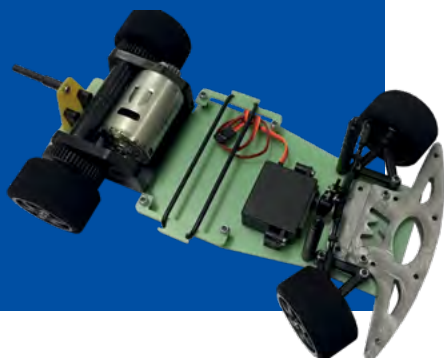
Minis

Much as the full-size, low-cost Mini Se7en club thrives after 50 years, so the Mardave low-cost class thrives after 40 years of RC. Today they use Mini bodysells and come as a complete kit for around £130 to which a battery and charger must be added, and radio control gear obtained.

Since its release in 2015 little has changed and the rules are simple. If it comes in the Kit its legal with a few additions. Servos cost £10, a G2 silver can motor slightly less, and 15/48 is the fixed gear ratio that levels out speeds in the class.

Minis are run indoors so are a great all-year-round class. All clubs cater for beginners young and old, with help available to get you going and then to improve your driving skills.

Clubs like Yorkshire, Crewe and Demon Models run the class every week. Racing is close, cheap and great fun. Probably the easiest and most enjoyable route into RC racing. Find those clubs on www.brca.org/clubs, and many other clubs who would welcome you racing this class of car.



Micros

Micros are 1/16th scale off road buggies, either 2WD or 4WD. They are miniature versions of the Baja and Off-Road buggies raced in the USA. Powered by small electric motors and LiPo batteries, these cars have dedicated local clubs where their small size is ideally suited to some fast racing and flying off jumps.

Search for clubs running Micros at www.brca.org/clubs and get along to one and find out more about this exciting class of racing.



Speed & Speed Records

We do mean SPEED too - How about 94mph for an electric bike, 106mph for a gas special and a whopping 163mph for an electric four-cell special!

Events are based on the same way world speed records are established in the full sized community, a run-up is followed by a trip through a speed trap and then stopping afterwards.

The events are organised in the UK by ROSSA – Radio Operated Speed Scale Association. Their main goal is to define a set of classes and rules for the running of speed events to ensure equal and fair competition between speed racers no matter what their location.

ROSSA's single set of rules allow other events to be run under the same rules, and competitors can compete directly with other speed racers at different events.

With the formation of ROSSA we can now organise a single world championship with individual events run in different countries running to the same rules with winners of classes coming from any of the events.

Get all the details at www.rossa.org.uk/index.html



GENERAL RULES

THESE RULES ARE APPLICABLE TO ALL SECTIONS

1. MEMBERS

It is accepted that all BRCA members have read the rules, contained within this publication, understand them, and agree to be bound by them during the period of their membership.

2. COMPETITORS

All competitors and all marshals at BRCA events and at all BRCA Affiliated Club events and any other event organised by said organisations must be BRCA members. It is permitted for potential new members to 'visit' affiliated clubs, for club events only, on three occasions before BRCA membership is required. The 'visitor' status is extended to drivers from overseas, and also includes sanctioned events, they should be members of their National Association. It is a requirement that membership cards be produced at events when requested by the event officials.

3. MARSHALS

It is an accepted part of Radio Controlled (RC) model vehicle racing that models differ from full size vehicles in that the operator is remote from the vehicle and the operator looks at the RC vehicle and does not see the potential view from it. It is the Marshals responsibility to ensure their own protection before leaving their designated marshals post to assist a RC vehicle. All marshals must wear "Hi Viz" vests/bibs/jackets. The Marshals must wear this apparel correctly. It is part of the race organiser's role to determine, to their best ability, a safe marshalling point for you. However it is every marshal's responsibility to report to race control if they feel that their post is inadequately protected.

4. SAFETY

GENERAL: Competitors MUST consider the safety of marshals, spectators, and other drivers at all times. No car shall be constructed or used so as to be dangerous to persons. All cars must have a positive means of stopping fitted and working. All members must comply with instructions and recommendations issued by product manufacturers, subject to any further restrictions in any BRCA rules. If you are unsure about any product of a chemical nature (cleaners, aerosols, additives, etc.) then ask to see the COSHH report for the product. If there is no COSHH report on the product then we recommend you do not use it.

All Sanctioned BRCA Race Events must carry out an On-site Risk Assessment prior to the Drivers Briefing. The Risk Assessment must be sent via email to riskassessment@brca.org within 3 days following the event.

BATTERIES: In the interest of safety, any battery pack(s) carried on a model car must be able to be disconnected quickly without the use of

tools in an emergency. Direct soldering is not allowed. All Lithium-based drive batteries must be in a 'closed' LiPo sack when being charged or discharged. This applies to any discharging procedures, except during a race or when using organiser supplied resistors to correct voltage. LiPo sack is defined as a receptacle designed for the purpose of charging LiPo/LiFe batteries and is of a suitable construction so as to contain a LiPo/LiFe fire. Sacks must be obtained from a recognised supplier to the UK RC industry.

The BRCA will not approve any Lithium battery for use at BRCA sanctioned events that exceeds the energy capacity allowed on passenger airline travel (currently 100Wh.). This maximum capacity is subject to any change by the airline industry.

Charging of Lithium based batteries (LiPo, LiFe etc.) at all events and in all Sections must be strictly in accordance with the procedures detailed in BRCA Electric Board rules. These procedures are covered in Electric Board rules 3.6, 3.7, 3.8, 3.10.

'Over' Charging of Lithium based batteries is potentially dangerous and maximum charge cut-off voltages must be strictly adhered to. The maximum charge cut-off is based on 4.20v per cell (LiPo), 3.70v per cell (LiFe) for cells connected in series. Therefore the maximum charge cut-off voltages allowed are:

1S - 4.20v (LiPo), 3.70v (LiFe)

2S - 8.40v (LiPo), 7.40v (LiFe)

4S - 16.80v (LiPo), 14.80v (LiFe)

Effective from 1st. April 2017:

ALL Lithium based 'drive' batteries used in ALL Sections must have a hard, protective case that completely envelopes the cell(s). The case should be made from ABS or a similar strength material. The two halves of the case must be factory sealed in a way that any attempt to open the case will destroy the case. The only opening in the case that is allowed is for exit wires or 'pin type' connectors. Lithium based batteries that are used for powering receivers, servos or other devices, that have a capacity exceeding 10Wh., should preferably have a 'hard case' (as detailed above). If a 'soft-cased' battery is used that is over 10Wh. then it must be protected from accidental damage. This protection can be an equally strong 'casing' or 'box' within the design of the car that encloses the battery, or other form of protective shielding that will totally enclose the battery and protect it from accidental damage during racing or maintenance. Any Lithium battery not having the original manufacturers label that shows the energy capacity in Wh. should not be allowed.

Any member found not complying with these procedures will be removed from the meeting and have their membership suspended immediately.

5. OFFICIALS

At BRCA sanctioned events (Internationals, Nationals, Regionals etc.) the BRCA Steward holds responsibility for the safe running of the event. The BRCA steward will normally be the highest-ranking BRCA official present. In the event of a BRCA Executive officer attending an event, that responsibility is passed to the highest-ranking officer of the section organising the event present. By formal agreement, i.e. in writing, either in meeting minutes, or at the event in question the stewardship can be passed to another suitably qualified person. Club committees should adopt the same process. Stewardship would normally rest with the Club Chairman, however clubs are recommended to minute with whom stewardship of events rests, or is passed to, in the event of absence.

6. TRACKS

Tracks must have an outer perimeter sufficient to contain the RC vehicles being operated within it. At all BRCA sanctioned events, the BRCA steward is responsible for designating the track area, which may include pit lanes and start/finish areas. The only persons allowed within the aforementioned areas during controlled practice and racing procedures are marshals and other relevant race officials, and mechanics are permitted within a designated area, and all of these persons must be BRCA members or a competitor. Track markings must be designed so as to minimise the possibility of R/C vehicles leaving the confines of the track. This rule does not differentiate between permanent and non-permanent facilities, it is the organiser's responsibility to determine the suitability of their facility for the class of RC vehicle being operated. It is all competitors' responsibility to report any issues with track safety to race control.

7. DRIVERS' BRIEFING

All sanctioned meetings (e.g. Internationals, Nationals and Regionals etc.) must have a drivers' briefing before the start of the racing, all drivers are required to attend. The drivers are responsible for communicating all information to anyone else concerned (e.g. mechanics, guests) The drivers briefing must contain: Format of the event; Designation of the track area; Location of safety equipment; Location of Fire Exits; Explanation of any local rules; Marshalling requirements; Identification of Officials; plus any other information the organisers deem necessary.

Note: If a meeting is over more than 1 day, and consists of separate events, then a drivers briefing should be conducted before the racing commences each day.

8. EQUIPMENT

All events are required to have the following equipment: First aid kit (for self administration), appropriate fire extinguisher, accident book (in which all injuries must be recorded). In addition the organiser must know local procedures for emergency services and have a means of contact (e.g. a mobile phone).

9. SMOKING

Smoking at BRCA events and BRCA sanctioned events is prohibited, other than in a designated area.

10. RADIO EQUIPMENT

The BRCA recognises the UKRCC as the national authority for the UK on radio equipment.

The BRCA will work within the rules and guidelines specified by the UKRCC. RC Equipment must be used in accordance with the manufacturers guidelines.

Any modification to any component that may affect performance and/or power of original equipment is specifically not allowed.

This applies especially to the aerial and power source.

Only published frequencies are allowed (see Handbook).

The reversal of crystals is not allowed.

11. RECORDS

All clubs and national event secretaries are required to keep complete membership and entry details respectively; these details must include full names and addresses, and are recommended to include emergency contact phone numbers. The relevant section official must keep entry details for sanctioned events and clubs keep records of attendance at meetings, (e.g. heat list/entry forms) It is a requirement that all accidents must be reported to the BRCA officer responsible for Insurance (currently the Treasurer) as soon as possible.

12. CONDUCT

Any driver, representative, mechanic or friend of a driver found to be under the influence of drink or drugs or behaving abusively will be expelled from the meeting (a meeting may be one or more days and consist of more than one event/class). Affiliated clubs must keep an 'Incident Book' in Race Control. Any incidents that are likely to bring the sport into disrepute should be logged and the information passed onto the Club Liaison Officer, for presentation to the Executive Committee as required. Any individual subject to disciplinary action (see Rule 9 - Constitution) shall be notified in writing, the notice will also be forwarded to all association officers and club representatives.

13. VEHICLE SCOPE

The BRCA will not recognise a model vehicle as being suitable for Radio Control that is more than any of these measurements; 1 metre long, 20kg in weight or a maximum of 35cc engine capacity.

14. ELECTRONIC DRIVING AIDS

Steering and driving/brake can only be operated by direct action of the driver using the Radio. The use of traction control devices, active suspension devices and any steering or power control aided by gyroscopes, 'G'-force sensors or devices giving a similar effect is strictly forbidden. It is strongly advised that competitors do not use any radio/receiver combinations that have the capability of performing the above functions at BRCA sanctioned events, even if the functions are disabled. Organisers have the right to refuse such equipment being used, if they consider the

non-allowed functions could be activated whilst the vehicle is being driven.

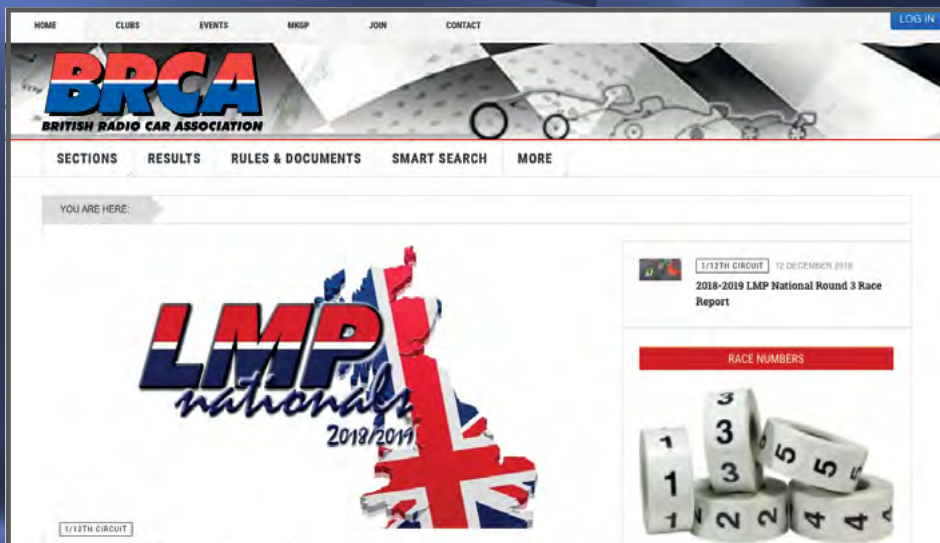
Sensors are only allowed for the purpose of passive data recording and not for adjusting the performance of the car whilst in motion.

It is not allowed to use any form of telemetry with active transmission, which in the opinion of the event officials or steward, is judge to give a competitor an advantage during any race.

Clarification: It is not allowed for any radio/wireless signals to be transmitted from the car to an external source during the race that is judged to give the driver a competitive advantage during that particular race. Drivers found using any of the above forbidden items/devices will be subject to disqualification from the event where the items are used and can be banned from all BRCA events for a period of up to 10 years.



To keep up to date with what's going on in the world of Radio Control Cars visit the BRCA main website at www.brca.org



CONSTITUTION RULES

1. TITLE

The Association shall be known as The British Radio Car Association.

2. OBJECTIVES

- (a) To promote the construction and competition of radio-controlled cars.
- (b) To facilitate the exchange of information and ideas relating to the sport.
- (c) To set rules and standards for construction and competition.
- (d) To encourage National and International competition within a co-ordinated calendar.

3. MEMBERSHIP

Membership shall be open to all and shall be deemed to commence when the Association issues the appropriate membership documentation. Membership shall be within the following categories:

- (a) Full Individual member.
- (b) Non Racing member – Persons who while not actually competing are involved in the event, be that helping to organise or run the meeting or providing assistance to a competitor (Pit Crew, stand in Marshal etc.)
- (c) Fellows - Persons who in the opinion of a two-thirds majority of an AGM of the Association have performed outstanding service to the Association. Fellowship of the Association carries automatic Full Individual membership for life and may only be rescinded by a two thirds majority vote at an AGM of the Association. Fellows are to be elected at the AGM of the Association on the recommendation of the Executive Committee. Not more than two Fellows may be elected in any one year.
- (d) Club Affiliation - Any club who has satisfied the Association Secretary of its willingness and ability to fulfil the obligations of an affiliated club. Each Club must have four 'Full Individual members' registered as BRCA members, including the Chairman and the Secretary of the Club and two other Officers of the Club, for Club Affiliation to be granted.

The Members Handbook will be posted to all members.

All members have the right to attend and vote on issues at the Association AGM, additionally Full Members have the right to attend and vote at Section Conferences.

Proposals for any changes to the Constitution or General Rules must be sent to the Association Secretary.

Proposals for any changes to Section Rules or Procedures must be sent to the secretary of the section involved.

Proposals can be submitted up to five weeks before the AGM (includes Constitution, General Rules, Section Rules). Proposals received after

this date will be for discussion only and not voted on. All proposals for changes to; Constitution, General Rules and Section Rules will be published on the BRCA website four weeks prior to the AGM.

4. SUBSCRIPTIONS

The subscription period shall be one year running from the 1st January to the 31st December of the same year. Membership subscriptions shall be reviewed and fixed annually at the AGM. Any member who has not paid his/her subscription within ONE month of the renewal date shall be assumed to have terminated his/her membership.

5. RESIGNATION

Any member wishing to withdraw from Association membership must notify the secretary in writing.

6. CESSATION OF MEMBERSHIP

Any member failing to renew his/her membership as required or any member notifying his/her resignation shall forfeit all right to claim on the Association, its property or its funds.

7. OFFICIALS

To qualify for election to any Association Committee position, the member so elected will become a Full Individual member of the Association if not already one. The following Officers shall be elected annually for a period of two years at the AGM: Chairman, Secretary and Treasurer plus such other Officers as may be deemed necessary. Nominations for these positions to be sent to the Secretary in writing four weeks before the AGM. The nominee must be a Full Member of the Association.

The above Officers together with the Chairman and Secretary (unless otherwise nominated) from each Section of the Association shall comprise the full Association Executive Committee. The Executive may meet in full or in part where the business to be discussed is only relevant to clearly defined areas of the association, e.g. Sporting or Administrative sub committees.

A quorum of the Executive Committee shall consist of at least 60% of the Executive Officers, invited to the meeting. All Officers elected by the AGM shall be ex-officio members of all committees and subcommittees appointed within the Association.

8. COMMITTEES

Section committees shall be established within the association to administer for the individual needs of the members racing interests. Each section committee shall comprise of a Chairman, a Secretary and such other committee members as sectional conferences shall decide. One official, normally but not essentially the Chairman, must attend Executive committee meetings.

The title of each section shall be decided by its officers. To invite a representative from Northern Ireland, Scotland and Wales to attend Executive Committee Meetings and to circulate information of meetings to all Sections.

9. POWERS OF THE COMMITTEE

The Executive Committee shall manage all concerns of the Association upholding the Associations Constitution, and shall have powers to settle all points of interpretation of Association rules, providing such powers shall not overrule a resolution of the AGM. A Sectional Committee shall manage all the concerns of the racing interest for which it was established, with powers to settle all points of interpretation of Section rules, provided such power shall not overrule a resolution of a Section Conference, AGM or General Rules. A Section Committee quorum will be decided by that Section Committee. The Executive Committee and any Section Committee shall have powers to establish sub-committees to manage special interests or events and to co-opt members onto such sub-committees. Any committee may, from time to time, fill any vacancy in its number which may arise for the remaining period of office. If the conduct of any member, in or out of Association events, shall in the opinion of the Executive Committee, or member of it, be injurious to the character or interest of the Association then membership can be suspended until the matter is dealt with by the Association Executive. The Association Executive can require said person to attend such meeting as is required to explain their actions, they shall have the power to expel such member or call upon them to resign and will there upon cease to be a member of the Association, this decision will be ratified by the Executive Committee. Should a member who has been expelled or been required to resign wish to appeal, this shall be done in writing to the Association Secretary and the appeal will be held before the Executive Committee. In every case of expulsion or required resignation of a member the decision of the Executive Committee shall be final and the excluded member shall have no remedy against the Association or Committee, or any further right of appeal. A minimum of two thirds majority shall be necessary to order an expulsion.

10. RULE CHANGES

The Executive committee has the power to delete, amend or change any existing rule(s) or add any new rule(s) to the Constitution, General Rules or Section Rules, to accommodate any changes in legal or fiscal requirements, or changes in recognized or legally required safety procedures. These actions can take place at any time within the association's year without the need for an EGM

or AGM. Any action of this nature will be made known to the membership in the following edition of CC and will be included on the official BRCA website. Any decision taken must be ratified at the following AGM with a 2/3rds majority.

11. VOTING

- 1 Proposal for change of the Association Constitution shall require a two thirds majority of member present at an AGM conference, postal or proxy vote respectively.
- 2 Proposal for change of the Association General Rule shall require a two-thirds majority of members present at an AGM conference, postal or proxy vote respectively.
- 3 Elections of all officers (including Section officers) shall be decided as follows:
 - a) For one candidate only: A simple majority vote of those members present, abstentions not considered.
 - b) For two candidates only: A simple majority vote of those members present abstentions not considered.
 - c) For more than two candidates: First: Vote taken for all candidates.
Then: A second vote including only the two candidates with the highest votes. This will be decided by a simple majority, abstentions not considered.
- 4 Proposals for change to Construction and Procedure Rules within Section conferences shall require an overall majority (min. 51%) of those members present. If there is an equal vote, then the Chairman at his/her discretion may use a casting vote. If an overall majority is not achieved, then the amendment/rule is not adopted.
- 5 At an EGM or Postal vote, voting procedures will follow the above format.

12. FINANCE

All matter relating to the spending of Association funds shall be referred through the Treasurer to the Executive Committee. The Treasurer shall make an annual financial statement to the AGM offering all relevant documents for inspection at the meeting. Sections holding funds shall be required to deliver reports as required by the Association Treasurer.

13. FINANCIAL YEAR

01 October to 30 September.

14. ANNUAL GENERAL MEETING

The AGM shall be held as soon after the end of the financial year as is practical and in any event not later than the month of February following. No BRCA Sanctioned events may take place on the day of the AGM. The following business shall be transacted at the AGM:

- (1) Reports on the general working of the Association and its sections.

- (2) Representation of the Association accounts.
- (3) Election of Officers and Auditor.
- (4) Review and agree the annual membership fee.
- (5) Discussion of any other business of which due notice has been given.
- (6) Arrange a provisional date for the next AGM which shall in any event be held within thirty days of the provisional date.

15. EXTRAORDINARY GENERAL MEETING

An EGM may be called at any time if the Executive Committee so decide. The Secretary shall also call a meeting on receiving written request to that effect, signed by no less than 10% of the membership. Such a general meeting shall take place within 28 days of the written request being received and all members shall receive 14 days notice of the meeting, but without the necessity for detailing any further particulars. A resolution of an EGM shall not be valid unless 10% of the membership is present and not unless the resolution be passed by at least two thirds of the members voting.

16. MINUTES OF MEETINGS

Minutes of an AGM, EGM or annual Conference shall be published as soon as convenient thereafter and in any case before the next similar meeting. Minutes of committee meetings shall be available to all committee members, including ex-officio members, before the next similar meeting. Copies of all minutes shall be kept indefinitely by the appropriate officer.

17. DEFICIENCY OF FUNDS

In the event of insolvency, the deficit shall be made good by an equal payment from each member or in such manner as an AGM or EGM shall decide.

18. MEMBERS ADDRESSES

Each members address shall be recorded in the Associations records and shall be deemed to be correct unless the Membership Secretary be notified in writing of an alteration of change of said member.

19. CONSTITUTION RULES

A copy of the constitution shall be forwarded to each member on joining and thereafter annually in an Association Handbook. These rules so presented shall be binding on every member. No member shall be absolved from the effect of these rules on allegation of not having received them.

20. INTERPRETATION OF RULES

The Executive committee shall be the sole authority for the interpretation of these rules and the decision of the committee upon any question of interpretation, or upon any other

matter affecting the Association not provided for by these rules, shall be final and binding on the members.

21. ALTERATION OF CONSTITUTION

The Constitution defines the rules for government of the Association. All alterations or additions to the Constitution may only be adopted by resolution at an AGM or EGM convened according to the Constitution. Such resolution must receive a two thirds majority vote.

22. DISSOLUTION OF ASSOCIATION

If at any general meeting a resolution for the dissolution of the Association be passed by a two- thirds majority of the membership present, and such resolution be confirmed at an EGM, held not less than one month thereafter at which not less than half the members are present, by a majority of two-thirds of the members the committee shall thereupon or at such date as shall be specified in the resolution, proceed to dissolve the Association. The committee shall proceed to realise the property of the Association, and after discharge of all liabilities, shall divide the same amongst all the members according to the proportions decided at the EGM.

Upon the completion of such division the Association shall be dissolved.

23. OBLIGATION OF MEMBERS

- (a) To uphold the Constitution of the Association.
- (b) Affiliated clubs must keep the Association informed of the names and addresses and interests of ALL their members (stating if they are Association members in any other capacity than club affiliated members) and in addition the Association must be informed immediately of any additions, deletions or changes in their membership. The affiliated clubs must advise the Association of the name and address of the club official who is responsible for the communication of the above information.

24. AWARDS / PRIZES AT BRCA SANCTIONED EVENTS

- (a) Unless the Executive committee has first given its express permission in writing, no trophy, award or prize of any kind may be given which has an intrinsic value greater than £50.00 UK Sterling.
- (b) Under no circumstances are cash prizes to be awarded.

ELECTRIC BOARD RULES 2019

UPDATED - NOV. 2018

The BRCA Electric Board will be known by the acronym EB.

NOTE:

As advised in 2011, the older technologies of NiCd/NiMH Batteries and Brushed Motors are no longer submitted for inclusion on the homologation lists that the EB maintain. Consequently, the rules covering these technologies have been removed from the following pages and are no longer published in the Handbook. The rules and homologation lists covering these items will remain available on the BRCA website.

1. ELECTRIC BOARD PRINCIPLES

- 1.1 The powers of this committee are exclusive to the areas of electric motors, rechargeable batteries and the electronic devices used in the control of electric scale models. It will serve the BRCA sections that use these items.
- 1.2 All BRCA Sections that use items listed in (1.1) above are entitled to be represented on the EB.
- 1.3 The EB will draw up homologation lists for Motors, rechargeable Batteries and Electronic Speed Controllers (with zero timing) that are for the use of the BRCA Electric Sections.
- 1.4 The EB will investigate tools and procedures and provide such to the BRCA Sections to enable them to control the use of items on homologation lists. Funding for this will be raised from homologation fees.
- 1.5 The EB will not allow the use of any components that would compromise any single section's rules, but any single section may choose not to allow the use of items on the homologation lists.
- 1.6 All findings, homologation lists or announcements will be published on the official BRCA website.
- 1.7 Anything not itemised by the EB on the relevant homologation lists is specifically not allowed for use at BRCA Sanctioned events for Classes that use specific lists.
- 1.8 The EB reserves the right to remove products from the relevant homologation lists, if it is found that :-
Items are not readily available for purchase within acceptable lead times.
The technical specification/design differs from the homologated sample.
Incorrect information being supplied relating to any item.
This would not include items that ceased to be available due to being superseded by new products.
- 1.9 Any proposals to the EB for changes to principles or any rules have to come via an Electric Section which is associated with the EB. All proposals will be circulated to all Electric Sections before a decision is taken.

2. HOMOLOGATION PROCEDURE & PRICE LIMITS

- 2.1 Before any item is added to an homologation list, the BRCA Electric Board Homologation Officer will need to be satisfied that any new Motor, Battery or ESC submitted for approval, has originated from a recognised distributor and will be available for purchase via a UK outlet.
New items submitted for homologation/approval should be sent to :-
Paul Worsley, 23 Prince Rupert Road, Stourport-on-Severn, Worcs. DY13 0AS.
The EB will review and set maximum retail price limits for Motors and Batteries. These prices may be amended, subject to any UK fiscal changes.
The maximum retail prices for the year starting 1st. April 2019 are as follows :-
2S Lithium Based battery pack (max. 7.6v) -- £95.00
1S Lithium Based battery pack (max. 3.8v) -- £65.00
Modified Brushless Motor. -- £95.00
'Spec.' Brushless Motor. -- £90.00
NOTE: The EB can review the above maximum prices. If it is decided that exchange rates dictate the EB may adjust these prices during the 2019 season.
MOTORS:
2.2 Manufacturers, Importers and Distributors should note, that if a range/type of motor is to be retailed with a choice of magnetic rotor design, then a sample of each rotor design must be submitted. Any design variants are required to be submitted for homologation before being allowed at BRCA sanctioned events. All variants homologated must be available for retail purchase.
Motor homologation fees :- All motors £40.00.
Cheque payable to the BRCA.
This fee is applicable to :-
Modified motors – Any individual type or range of motor.

Spec. (Stock) motors -- Each 'wind' class within any type or range of motor.

The motor(s) will be included on the homologation list when the EB Homologation Officer is satisfied with the eligibility and availability of the motor.

Motor homologation lists will only be updated and published on a Monday, therefore all data required for homologation must be received by the end of the previous week. The motor(s) will remain on the relevant homologation list for a minimum period of five years from the date of first registration with no further fees being payable during this time.

- 2.3 Manufacturers and distributors are requested to review the homologation lists and advise the EB Homologation Officer when a particular type or range ceases to be available for sale. Archive lists will be maintained on the BRCA website for these items. It is not intended that previously homologated motors cease to be eligible when removed from current lists – event scrutineers should not disqualify competitors using old motors which have previously been approved.

Batteries – Lithium Based (LiPo/LiFe) Packs:

- 2.4 Any new LiPo/LiFe battery has to be received by the BRCA Electric Board Homologation Officer by :-

2S -- 1st. Dec.

1S -- 1st. Dec. or 1st. July.

LiPo/LiFe Homologation fees:-

2S Battery -- £40.00.

1S Battery -- £25.00.

The prices cover each submission received, which could contain more than one battery.

Each individual battery must be supplied with:-

Safety test certification in accordance with; UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.6, Part 3, Sub-Section 38.3, Tests T1 to T8.

Technical Spec. sheet detailing the recommended charging rate, the maximum voltage when charging, case material, case wall thickness and method of sealing the case, the battery weight (max tolerance +/- 4%).

- 2.5 Subject to 2.1 & 2.4 (above), the new battery will be included on the BRCA homologation list(s) and will be allowed at BRCA sanctioned events from:-
2S Batteries -- 1st April following addition to the list(s)
1S Batteries -- 1st April following addition to the list(s), when submitted 1st. Dec.
or -- 1st. Sept. following addition to the list(s), when submitted 1st. July.

The interpretation being that new batteries will NOT be homologated during the 'Racing Year' or season for any Section.

3. RULES - RECHARGEABLE BATTERIES

Individual Electric Sections will decide which battery type (eg: 1S or 2S) is used within their classes of racing at BRCA Sanctioned events.

Lithium Based (LiPo/LiFe) Battery Packs:

The storage, charging and use of Lithium based batteries (LiPo/LiFe) can give rise to serious safety implications. The BRCA will publish guidelines for the safe use of these batteries on the BRCA website. It is imperative that the guidelines are studied and adhered to.

- 3.1 Lithium based (LiPo/LiFe) battery packs must have a hard protective case that completely envelopes the cell(s). The case should be made from ABS or a similar material. The two halves of the case must be factory sealed in a way that any attempt to open the case will destroy the case. The only opening in the case that is allowed, is for the exit of wires or pin type connectors.

- 3.2 All Lithium Based (LiPo/LiFe) Batteries must comply with the weights specified on the BRCA homologation list. The maximum tolerance for manufacturers is +/- 4%.

The maximum external case sizes allowed, including any manufacturer incorporated plugs or connections are as follows:

2S Batteries: (Stick & Saddle):

Length: 139.0 mm.

Width: 47.0 mm. (The max. width includes any side exit only wires).

Height: 25.1 mm. (Chassis location features extra to this dimension are allowed)

Saddle-Pack cells are allowed, and must comply with the above width and height dimensions. Saddle-Pack cells must have a combined length dimension of 139.0mm max. when placed end to end.

1S Batteries: (Stick):

Length: 93.0 mm.

Width: 47.0 mm. (Side exit wires are allowed outside this dimension)

Height: 18.5 mm. (Chassis location features extra to this dimension are allowed)

- 3.3 Individual cells used in the construction of the battery pack will be rated with a nominal voltage of no more than :- (LiPo 3.8v, LiFe 3.3v). Individual cells may be wired in parallel.

For 2S Batteries: The maximum connection 'In Series' is two, to give a Final pack nominal voltage of no more than :- (LiPo 7.6v, LiFe 6.6v).

For 1S Batteries: Cells can only be connected in parallel, to give a Final pack nominal voltage of no more than :- (LiPo 3.8v, LiFe 3.3v). (Previously approved 3.7v nominal cells are also allowed).

The maximum charging cut-off voltage will remain at 4.20v per. cell.

3.4 The battery pack shall have leads extending from the case for the positive and negative electrical connections using wire of adequate size to handle discharge rates acceptable to racing applications. Alternatively, the case shall have internal connection points for these wires clearly marked positive and negative so the user can apply the lead wires. Any type of metal connections that are incorporated in the battery pack by the manufacturer must be substantially below the major surface of the plastic casing, to prevent any 'short circuit' if placed on a conductive surface. Any type of connection adaptors added, that are conductive and protrude above the level of the plastic case must be removed before the battery is removed from the car.

It is strongly advised that the link wire for Saddle Pack cells utilises a plug which will separate with any undue force.

3.5 The case must have the original suppliers label intact stating:

The unique Part # for the pack, the rated nominal voltage, the chemistry (LiPo/LiFe), the 'C' rating and the rated energy capacity in Wh. The brand name/logo shall be easily readable.

3.6 All LiPo/LiFe batteries must be charged using a LiPo/LiFe-capable charger using the industry standard CC/CV (Constant Current/Constant Voltage) charge profile.

3.7 LiPo/LiFe batteries may be charged to a maximum of:-

2S Batteries may be charged to a maximum of 8.40v (LiPo) resp. 7.40v (LiFe).

1S Batteries may be charged to a maximum of 4.20v (LiPo) resp. 3.70v (LiFe).

LiPo/LiFe drive batteries must be a 'Lipo sack' at all times when being charged or discharged. This applies to any discharging procedures except during a race or when using organiser supplied resistors.

LiPo sack is defined as a receptacle designed for the purpose of charging LiPo/LiFe batteries and of a suitable construction as to contain a LiPo/LiFe fire. Overcharging is a serious safety hazard and will not be tolerated.

3.8 Any competitor found to be charging cells using a charger that is not specifically designed for LiPo/LiFe batteries, or using a charge profile other than the industry standard CC/CV, will be penalised at the event.

Any competitor found to have charged LiPo/LiFe batteries to above the maximum voltage values as detailed in 3.7 (above) will be penalised at the event. Section Officials are advised to monitor these procedures and act accordingly.

3.9 Modification to the original battery case by removal of material or any modification that

could be deemed to affect safety is not allowed.

3.10 The use of any additional heating of any type to heat a LiPo/LiFe Battery is not allowed. The use of any cooling devices or "freeze" sprays of any type to cool a LiPo/LiFe battery is not allowed.

3.11 It is strongly recommended that charging rates of Lithium based batteries are restricted to a maximum of '1C', as advised by manufacturers to maintain lifespan and reliability. From 2017 the 'maximum' recommended charging rate given by the manufacturer will be detailed on the homologation lists.

4. RULES – ALL CLASSES OF ELECTRIC MOTORS

4.1 There are currently two Classes of Electric Motors, for which the EB approve and control homologation lists. (The older technology 'Brushed' Motor homologation lists will remain available on the BRCA website). The current Classes being:-

Modified Brushless Motors.

'Spec.' Brushless Motors (10.5T, 13.5T, 17.5T, 21.5T).

All Brushless Motors have to comply with the rules in this section (4) and further rules detailed in sections 5 (for Modified Motors) or 6 (for Spec. Motors).

4.2 All motors must meet BRCA specifications before they will be approved by the BRCA Electric Board. Newly approved motors must be included in the homologation lists published on the BRCA website prior to being legal for use in BRCA sanctioned meetings.

4.3 If an approved type/range of motor is changed in any substantial way, it must be resubmitted for approval with a different item Part Number to the original, and must be available at UK outlets incorporating such changes. Examples:- Sleeve/Can and End-Cap designs, Sleeve/Can colour, label design, stack or stator designs, rotor designs or design change of any of the major components or assemblies. Any variants of interchangeable components produced by the motor manufacturer, must be available at UK outlets and be submitted for approval before being allowed. Approval of 'optional parts' will be limited to: Rotors and minor feature changes (eg. timing adjustment or optional metal End-Cap). Only items that are listed as 'optional parts' on the relevant Motor Class homologation list are allowed. No modifications, design changes or removal of materials are allowed to any approved motor.

Motors used must be :- as produced by the original manufacturer without modification and starting 01.03.18 any variation must be within BRCA price limits, (other than using approved optional parts).

The only exceptions to the above being:- it is allowed to change the following wearing items, but they must be of similar design and materials to the original parts supplied by the manufacturer in the motor submitted for approval :- screws, threaded timing retainer clamp, or bearings (which must be the same dimensions as original). Addition or removal of 'screw-fixing' or 'clip-on' heatsinks is allowed. Change of Timing End-Cap colour is allowed providing all design features are maintained.

- 4.4 The swapping of components between approved motors, (a.k.a. hybrids) is not allowed.
- 4.5 All approved motors are subject to checking at any time by the BRCA Homologation Officer to verify that they are still in compliance with BRCA specifications.
- 4.6 All motors used in BRCA sanctioned meetings must have their original motor builders label(s) substantially intact to be eligible.
- 4.7 It is the competitors responsibility to ensure that any motor used at a BRCA sanctioned event complies with all BRCA rules. If any motor is found to NOT comply with the BRCA motor rules, any results using such motor will be disqualified, regardless if the motor is included on the BRCA homologation list. If there is definitive proof available; that the motor manufacturer supplied a motor (to the UK distributor or competitor) that does not comply with BRCA rules, then sanctions could be taken against the specific manufacturer(s).

5. RULES - MODIFIED BRUSHLESS MOTORS

The following rules have been agreed by EFRA and various International organisations.

- 5.1 All motors are subject to the rules in section 4.
- 5.2 Sensored or sensorless motors are allowed.
- 5.3 The motor has to be rebuildable. Ball bearings are allowed. The motor must be constructed to allow easy replacement of the: rotor, bearings and front end-bell/plate.
- 5.4 If the motor is sensored:-
It must use a six position JST ZH connector model number ZHR-6 or equivalent connector with 6 JST part number SZH-002T-P0.5 26-28 awg. contacts or equivalent.

Wire sequence must be as follows:-

- Pin #1 - 0V
- Pin #2 - Phase C
- Pin #3 - Phase B
- Pin #4 - Phase A
- Pin #5 - Temp control, 10k Thermistor referenced to 0V potential.
- Pin #6 - VCC Nominally 5V, but may be 3.3V-6V.

Compatible speed control must use the 6 position JST header part number X-6B-ZR-SMX-TF (where the X denotes the style of the header), or equivalent. The motor power connectors have to be clearly marked A, B, C.

A for phase A. B for phase B. C for phase C

- 5.5 The Can. (Based on `05` size specifications).
The overall dimensions of the assembled motor do not include :- solder tabs, lead wires, sensor plug or the original manufacturer's logo or name.
Overall maximum diameter is 36.02mm measured at whatever point yields the maximum dimension. Overall minimum diameter is 34.0mm measured at whatever point yields the minimum dimension. Maximum length is 53.0mm measured from the mounting face of the motor to the furthest point of the end bell. Minimum length is 50.0mm measured from the mounting face of the motor to the furthest point of the end bell. Motor mounting holes must be on nominal 25.0/25.4mm centres.
- 5.6 If the stator cannot be easily removed from the assembled motor for technical verification of sizes or construction, then the Can/Sleeve must have:
 - a) Minimum two pairs of Slots or holes (each exposing 3mm of stator ends minimum), in line with the centre-line of the stator, that will allow measurement of the stator length.
 - b) Slots or holes to allow visual appraisal of the laminates used in the stator.
 NOTE: Wording in bold, was applied to any new motor range submitted from 01.03.18. The original rule was applied to any new range of motor starting 2012. Older motors (before 2012 having approval) without any of these features are not excluded.

- 5.7 The Stator : Slot-less stators are not allowed. The stator must be continuous laminations having the same overall design and shape, being one after the other without anything in between. The laminations must be of one homogeneous material without cut-outs, holes or hollow sections other than for the three slots for copper coil wires and the three grooves for the screws used to hold the entire assembly together.

Stator minimum length 19.30mm, maximum 21.00mm, measured across the metal surfaces of the laminates and not including any coatings. The faces of the end laminates of the stator must be free of any coatings or mouldings for 1mm from the outer circumference to allow direct measurement across the metal faces of the stator ends (applied to any new motor range submitted from 01.03.18). The outer circumference edges of the end laminates must be complete with no material removed, to allow accurate measurement.

The thickness of the stator laminations is 0.35 +/- 0.05mm. All laminations must be of the same material.

The Inside diameter of the stator must accept 'plug gauges' of 12.50mm min., 16.00mm max. with the 'plug gauge' concentric to the motor can.

- 5.8 The Winding: Only three slot (phase) "Y" (star) or delta wound stators are allowed. Only circular (round) pure copper wire permitted. No turn limit.
- 5.9 The Rotor: Shaft diameter must be 3.175mm where the pinion gear locates. Only one piece, two pole Neodymium or Ferrite magnetic rotors are permitted (bonded or sintered). Magnet minimum length 23.00 mm, maximum 27.00 mm., not including any non-magnetic balancing aids. Magnet minimum diameter 12.00mm, maximum 15.50mm. The original Rotor can be changed providing the replacement: complies with the above specifications, has been approved, is supplied by the motor manufacturer and is available retail.
- The rotor will be identified with the manufacturers name or logo and the unique part number of the rotor. This applies to all rotors in new motors or new optional rotors starting 1st. April 2015 onwards. Rotors approved before this date (without identification) retain approval.
- 5.10 All motors must have the original manufacturer's logo or name moulded/engraved by the manufacturer into the end bell/plate.

6. RULES - SPEC. BRUSHLESS MOTORS (21.5T, 17.5T, 13.5T and 10.5T)

The following rules have been agreed by EFRA and various International organisations. Motors in the Brushless Spec. classes have specific design features that differ from modified versions.

- 6.1 Brushless Spec. motors are subject to all rules in section:- 4. Rules - All Classes of Electric Motors. Brushless Spec. Motors must also comply with section:- 5. Rules – Modified Brushless Motors, with the following exceptions.
- 6.2 Only sensored motors are allowed in the Brushless Spec. classes. Sensor connection requirements are as 5.4 (Brushless Modified)
- It is not mandatory that sensored Speed Controls have to be used, or that the sensor 'harness' has to be connected.
- 6.3 If the stator cannot be easily removed from the assembled motor for technical verification of sizes or construction, then the Can/Sleeve must have:
- Minimum two pairs of Slots or holes (each exposing 3mm of stator ends minimum), in line with the centre-line of the stator, that will allow measurement of the stator length.
 - Slots or holes to allow visual appraisal of the laminates used in the stator.

NOTE: Wording in bold, was applied to any new motor range submitted from 01.03.18. The original rule was applied to any new range of motor starting 2012. Older motors (before 2012 having approval) without any of these features are not excluded.

- 6.4 The Stator: Slot-less stators are not allowed. The stator must be continuous laminations having the same overall design and shape, being one after the other without anything in between. The laminations must be of one homogeneous material without cut-outs, holes or hollow sections other than for the three slots for copper coil wires and the three grooves for the screws used to hold the entire assembly together. Stator minimum length 19.30mm, maximum 21.00mm, measured across the metal surfaces of the laminates and not including any coatings. The faces of the end laminates of the stator must be free of any coatings or mouldings for 1mm from the outer circumference to allow direct measurement across the metal faces of the stator ends (applied to any new motor range submitted from 01.03.18). The outer circumference edges of the end laminates must be complete with no material removed, to allow accurate measurement.

The thickness of the stator laminations is 0.35 +/- 0.05mm.

The Inside diameter of the stator must accept a 'plug gauge' of 14.50mm +0/-0.005 diameter, clearing the stator, plus its windings and the electrical collection ring at any end of the stator.

- 6.5 The Winding: Only three slot (phase) "Y" (star) wound stators are allowed. No delta wound stators allowed. Only circular (round) pure copper wire permitted. The electrical circuit through the windings can only be from the ends of the wires forming the designated number of turns. The three slotted stator must be wound with: -
- 21.5T Class:
21.5 turns of - 2 wires at: 0.724 mm. max. wire dia.
- 17.5T Class:
17.5 turns of - 2 wires at: 0.813 mm. max. wire dia.
- 13.5T Class:
13.5 turns of - 2 wires at: 0.724 mm. max. wire dia.
and -- 2 wires at: 0.574 mm. max. wire dia.
- 10.5T Class:
10.5 turns of - 2 wires at: 0.813 mm. max. wire dia.
and -- 2 wires at: 0.643 mm. max. wire dia.
- Wire dimensions are before lacquer coating.
- NOTE: The above metric wire diameter sizes are direct equivalents to the nominal AWG sizes previously shown. (Reference to AWG sizes removed for simplicity).
- 6.6 The Rotor: Shaft diameter must be 3.175mm where the pinion gear locates. Only one piece,

two pole Neodymium bonded or sintered, or Ferrite (ceramic) magnetic rotors are permitted. Magnet length will be 25.00 +/- 1.00mm, not including any non-magnetic balancing aids. Magnet outside diameter will be 12.20/12.51mm (min./max. with no further tolerance) for the entire length of the magnet. The shaft outside diameter where the magnet is mounted will be 7.25mm +/- 0.15mm, with this diameter extending beyond the magnet to facilitate measurement.

The rotor will be identified with the manufacturer's name or logo and the unique part number. This applies to all rotors in new motors or new optional rotors starting 1st. April 2015 onwards. Rotors approved before this date (without identification) retain approval.

All Spec. Motors (21.5T, 17.5T, 13.5T, 10.5T) will be limited to ONE Optional Rotor for any New Motor submitted, starting 01.11.17. The manufacturer or UK distributor to specify the Optional Rotor.

- 6.7 All motors must have the original manufacturer's logo or name moulded/engraved by the manufacturer into the end bell/plate. A unique marking or feature that is difficult to remove must be incorporated into the assembled motor to identify the motor is either a 21.5T, 17.5T, 13.5T or 10.5T Spec. class motor. Spec. motors introduced from 2011 onwards must have; the 'wind' # etched/engraved onto the outer surface of the motor on a part of the motor that cannot easily be separated from the stator windings. They must also be identified as Spec. class motors.

NOTE: The above rules form the basis for Brushless Spec. motors. If it is found that variations of these motors from different manufacturers give large differences in performance, then electrical tests may be adopted.

7. RULES - ZERO TIMING SPEED CONTROLLERS ('BLINKY')

Definition of a :- Zero Timing Brushless Speed Controller ('Blinky').

Only speed controllers that do not dynamically adjust the timing of the motor are permitted. When operating in this mode, all advanced timing functions such as Boost, Turbo, etc that change the timing of the motor are disabled. The commutation sequence is limited to a "6-step" type and commutation of the Speed Control must follow the motor's hall sensor signals 1:1. Therefore no change of timing (either advance or retard) is allowed at any RPM or throttle position. When the "Blinky" mode is activated, it will be identified by a blinking LED or LED's while the ESC is armed and in neutral position.

Brushless Speed Controllers that have any programs or features that can alter the 'fixed' timing of the motor, must have these features disabled when being used at any events (or Classes) where 'Zero Timing', 'Blinky' programs are required in the rules.

Sections can reserve the right to retain a speed controller and motor after the conclusion of a meeting to measure its performance against the above criteria in a controlled environment. The equipment, or identical new replacements, will be returned to the competitor within 5 working days. Sanctions may be taken against a competitor and/or manufacturer if a controller is found to be non-compliant.

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