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## **MINUTES of BRCA ELECTRIC BOARD MEETING - 26.10.19 v1**

**Date:** Sat. 26<sup>th</sup>. Oct. 2019  
**Time:** 14:00.  
**Venue:** Premier Inn Leicester, Fosse Park, Braunstone Lane East. LE3 2FW.

### **Present:**

Paul Worsley (Paul W.), Gavin Clinch (GC), David Gale (DG), David Tomlinson (DT), Emma Parker (EP), Keith Wardle (KW).

### **Apologies:**

Peter Winton. Alister Hart. Matthew Coverley.

### **Minutes of 2018 Meeting:**

The minutes from last years meeting were agreed. Proposed DG. Seconded GC.

### **Tech Officer & Secretary Report: Functioning of the EB:**

At a previous year meeting, Paul W. gave an overview of the history and working of the EB. There was no need to repeat this detail this year.

The procedure of approving motors and batteries has continued to develop into International recognition of what we do. Paul W. conducts these procedures for BRCA, EFRA and IFMAR and during 2019 we have had a large involvement with ROAR regarding motor issues. As Paul W. has an official position within EFRA and IFMAR and now more involvement with ROAR (this covering a large proportion of International racing), it has been possible to have near identical rules in all four organisations. As a result, the majority of manufacturers respect this, as they know there are identical standards and they only have to contact one person for any clarification needed. It also helps the competitors, to have the same rules applied Internationally.

David G. conducts a similar procedure for the 'blinky' ESC's and the homologation lists produced by David are also recognised by most of the EFRA countries and even in countries outside Europe.

Full records are maintained for all Motors, Batteries and Speedo's. These are extensive, with many details itemised (52 for batteries, 32 for motors), plus all the notes and photo's.

For 2019, 173 Batteries were submitted for Dec. and 3 of the 1S batteries for July. Resulting in 4400 measurements & 9328 records entered. A lot more than previous years. Not all were approved, 8 failed.

During the year, a total of 74 motor types have been stripped and checked, plus the ones submitted for IFMAR. Not all were accepted, 27 failed. Many of the 'failures' have been re-submitted with the corrections needed for them to be approved. In some cases, simply correcting the 'failed' aspects is not acceptable, as we know motors have already been produced and sold. In these cases, Paul W. insists that the motor is visually changed and with a different Part #.

During the last four years, it has become noticeable that many manufacturers are 'pushing the limits' with regard to minimum stator lengths – they are still doing it.

My concern relating to wire sizes that I reported last year, is still giving me cause for concern. I know that some Chinese companies have poor quality control in this area and some will even produce wire diameters 'to order'. I also have to consider that the sample motor submitted to me could have been 'selected', with wire sizes that do not mirror what will be used in production.

I also know that wire is being 'stretched' in some cases and have to spend a lot more time checking diameters over the length of the wire to find this practice. Much more time is now being taken doing the checks for stator length and wire sizes that in earlier years and the records are extensive.

We record all resistance readings and the cross-sectional area of the wires, to compare with the maximum theoretical allowed. Resistance readings will not necessarily indicate if the windings are legal !! Stator designs often affect the overall length of wire, so the resistance will vary accordingly. I have never seen what 'could be' the perfect wind to give the lowest resistance.

In May/June this year, motors of a particular manufacturer were retained from two UK National events and sent to me for checking. Both motors 'failed' on stator lengths by a considerable amount, with other aspects of the stator assembly to the 'Can' also failing. This manufacturer had previously been warned about stator lengths being close to minimum length.

This resulted in a great detail of discussion and mails between:- BRCA colleagues, EFRA colleagues and the ROAR President also involved. The document/email record that I have kept extends to 45 pages !!!!!!! BRCA and EFRA decided to remove this particular motor type from the Homologation Lists and as we knew they had a new motor to be released within weeks, we also imposed 'a ban' of accepting any further motors for homologation for a period of eighteen months (Jan. 2021). This was needed, otherwise no effective penalty would have been served.

It should be noted that the manufacturer involved has threatened legal action onto myself personally and the BRCA for affecting his sales.

The practice of making 'specific' Modified motors to suit the 6.5T limit for 1/12 events still continues. So, in most cases I have to insist that two Modified Motors are submitted, to verify if there is a specific 6.5T with different design and features within any Modified Motor type.

I have considered proposing a rule amendment to require that the basic design of any Modified type motor has to be the same for all winds and only the wires and rotor can be different. This probably needs proposing to IFMAR first.

SO: The checking becomes more involved with each year, which is to be expected when performance is the key requirement. Nothing gets easier !!

During this year, I have been giving some assistance to the F2 Stock Car Section. This Section uses the older 'sealed silver can' 540 motors. I have stripped and measured various motors for the Section to find the technical specifications of the motors currently available. As their rules only detailed the names of motors that could be used, I advised that they effectively had zero control of manufacturers changing specifications to any particular motor type. Therefore; the wind number or wire sizes could be changed and they would not know.

I have therefore given the F2 Stock Car Section some simple technical rules to work with that should ensure that the motors they allow are built to 'standard specification'. I will check samples for them.

### **Rule Amendments:**

1. It was agreed that the following text needs adding to EB rules 5.7 (Modified) & 6.4 (Spec.).

**NOTE :** Whilst all laminates in the stator must have the 'same overall shape/design', removal of sharp edges is allowed in the winding area on the end laminates (only) to offset damage to wire coatings. This is clarified as follows:- The top and bottom laminate in the stator stack of Brushless Motors covered by these rules may be deburred or chamfered only on the wire winding web/leg, so long as the overall thickness of these end laminates is the same as other laminates in the stator and so long as the overall measured width of the wire winding web/leg of these end laminates is the same as other laminates in the stator. This requirement effectively restricts any deburring or chamfering to only the top and bottom laminates in the stator.

The above wording was published on BRCA, EFRA and ROAR websites in June, following discussions and agreement between these organisations. It is already added into IFMAR rules, already proposed for EFRA rules, It therefore needs adding to EB rules.

Proposed (GV), seconded (DG).

**Proposal passed unanimously.**

2. The EB officers have decided that starting ?????? Motor Homologation Lists will only be updated once each month on the first Monday of the month. This has been introduced to simplify the process. As currently required - motors must be freely available in UK before they are added to lists.

Proposed (GC), seconded (DG).

**Proposal passed unanimously, with a start date of 06.01.20.**

3. Any other proposals or amendments needed (Added at meeting).

(DG) asked confirmation of the homologation fees that the EB currently charge. (Paul W) confirmed that Motors are currently £40 and batteries are £40 for a 'set' of batteries (usually many different items).

Given the amount of time taken doing all the 'checks', photo's, compiling all the records, when compared to what some organisations charge, the meeting decided that ESC's should also have homologation fees introduced and the fee for batteries should be for each battery (not a set of batteries). (Paul W) advised that the battery fee change should not be implemented for the submissions arriving this Nov., as the procedures and costs have already been published for several weeks.

Proposal was: Starting 01.01.20 -- Homologation fees will be £40 per. item to include motors, ESC's, and each individual battery.

Proposed (DG), seconded (GC).

**Proposal passed unanimously with a start date of 01.01.20.**

### **Maximum Prices for Motors & Batteries:**

Peter W. asked that the EB had some discussion regarding if we should continue with maximum retail prices for Brushless Motors. On the basis that it appears the current prices of the 'major' names are basically our limit price.

The general consensus of those present was that this needed looking at, as the observation by Peter W. was

recognised. A lot of discussion on this subject !!

Paul W. reported that most complaints about the max. price being too low came from distributors selling American motors. Presumably due to the fact that they ship the motors around the World twice, with associated costs. Also maybe the fluctuating \$ exchange rate.

The question was asked --- If we allow open prices and the 'major' names increase from our current maximum by (eg.) £20, would the distributors of the currently cheaper motors also increase by £20 simply to maintain the differential and therefore make more profit ?? If this happened, our drivers would definitely 'loose-out' and this is a distinct possibility.

The possibility of problems with what motors would be approved was also discussed in some detail, given that some manufacturers have 'special (and more costly) versions' and some allow you to order all sorts of 'tune-up' parts. This could give problems with our approval process, as these motors would then effectively be 'legal' to sell with the inflated prices and would the manufacturers then submit several versions of the same motor at different prices.

Paul W advised that we do not have to make an immediate decision, as our EB rules allow us to adjust any prices at any time during the year if the EB consider it to be necessary.

The meeting decided this needed more thought before taking a decision. We will discuss in the next few weeks.

### **Election of EB Officers & Section Contacts to be used:**

Due to the format within which the EB works, it has been agreed for several years that there is no need for a bespoke Chairman, as the Sections involved work closely together and no decisions are made without the involvement and agreement from all the Sections that form the EB. All Electric Sections are invited to contribute in EB proceedings.

Therefore the only elected Officers needed are for:- Administration and Technical Approvals.

The meeting agreed the following:-

Paul Worsley -- EB Secretary & Technical Approval Officer for Motors & Batteries.  
David Gale -- Technical Approval Officer for Electronic Speedo's (ESC).

### **Section contacts:**

1/12 LMPTrack	Peter Winton (Chair), David Gale (Tech.).
GT12 Track	Matt. Coverley. (Chair)
1/12 F2 Stockcar	Emma Parker (Chair), David Tomlinson (Tech).
1/10 Touring Car	Gavin Clinch (Chair), Alister Hart (Sec.). Peter & Tim Timms (Clubmans). Gareth Coates (Nationals)
1/10 Off-Road	Paul Worsley (Chair).
Bikes	??.
Micro	??.

### **AOB:**

Not strictly AOB but:- As detailed above, Paul W. has been helping the 1/12 F2 Stock car Section with their motor specifications. The F2 Section now has some simple technical specifications for the 'silver can' motors they use which will hopefully control these motors. The F2 Section has agreed to use these rules.

Paul W. spoke with the F2 Section Chairperson after our meeting and suggested we could include these 'silver can' motor rules in EB rules, simply to make them official rules within the EB and be recognised. This would also stop drivers/manufacturers allied to the F2 section making proposals to the Section for these rules to be changed.

**Your thoughts please !!!!!!!!!!! (Paul W.)**

Meeting closed at: 16:17

Paul Worsley - (EB Secretary & Tech Officer).

END