



# EFRA<sup>®</sup>

RC MOTORSPORT EUROPE



MEMBERS HANDBOOK 2024

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RC MOTORSPORT EUROPE

ASSOCIATE MEMBERS 2024

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RACING TIRES

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## APPENDIX 2

### 1/8th SCALE OFF ROAD CARS

#### 1. ALLOCATIONS FOR EUROPEAN CHAMPIONSHIPS

- 1.1. The number of drivers and the National Allocations for the European Championships will be decided upon at the EFRA AGM annually according to the following chart.

	GP	EC B	ECA/ ECA+	EC Masters40+	Electro 1/8
Days	Fri./Sun.	Fri./Sun.	Tue./Sat.	Fri./Sun.	Fri./Sun.
Min/Max No of drivers	120/144 max	120/144 max	150/180	120/144	120/144 max
The Venue (Track, Rostrum, pits space, commodities, etc...) must be sufficient for all participants.					
Recommended Date	2nd weekend of the month	2nd weekend June	2nd weekend July	2nd weekend September	Late August or late September
Compulsory Registration	EFRA or National	EFRA	EFRA	EFRA	EFRA
Allocation	NO	YES	YES	YES	YES
Restrictions	NO	See 1.5	NO	NO	NO

- 1.2. EC A+ with more than 150 drivers can only be allocated to federations that have already organized a successful EC B or EC A in the precedent years.  
The National Federation must confirm the capacity of the organizer for an event with more than 150 drivers. In order to ensure the appropriate rotation in the venues of ECA & ECB, when considering applications for each kind of event, the venues who had not allocated one of those in the preceding 3 years will have preference.
- 1.3. For allocation and re-allocation procedures see General Rules 3.6. and 6.2.  
At ECA and EC Brushless up to 24 spots may be offered for overseas drivers following a reciprocal or global agreement
- 1.4. If a driver has not registered by midday on the first day of the event, then his place can be re-allocated or deleted from the list unless that driver has contacted the organiser to explain his reason for not registering on time.
- 1.5. A 4WD European Championship for B Class drivers may be organized each year. Entries will not be allowed for drivers who have already won that event or who have ranked in the first forty (40) places of any of the preceding two (2) 1/8th Off Road EC A Championships and to any driver who has ever taken part in an EFRA European Championship A main final in any class of racing in the last 15 years. To be run if possible the 2nd weekend of June.
- 1.6. Allocations lists with reallocations for EC A & B to be published on EFRA website: 5 weeks before the first day of the event.
- 1.7. a). A Masters40+ EC may be organized each year, Preferably Mid September.  
A designated tyre system may be used for this event following a decision made at the previous section meeting.  
b). An Electro 1/8 Buggy event may be organized each year, preferably late August of late September and out of summer season if it is held indoors.  
The Main final to be 3 races of 10 minutes duration.

- 1.8 All European Championship organizers must inform EFRA before 31 December the year before about the best tyre combinations for their track.
- 2. RACING FORMAT EUROPEAN CHAMPIONSHIPS AND G.P.**
- 2.1 All Events, formats and timetables should be adapted to the real number of entrants and facilities. The 3 days events, i.e. the GPs, the European Championship for B class drivers and all other ECs but ECA will have the same format as specified in the following rules adapted to a 3 day event with only four (4) attempts at qualification, only two (2) to count, weather permitting. Entries will be limited to 120 drivers, special allowance can be given by the EFRA AGM Section Meeting up to a maximum figure of 144 drivers, and reseeding of the heats will only be done in case of clear necessity on the criteria of the R.D. and Referee. Order of the rounds will be always the same, from 1 to 12. With the fastest drivers into the last groups. At the GP held at the event intended to host the European Championships in the previous year and in the same year i.e. the warm up event, the full race program should be used and tested including the reseeding of heats after practice.
- 2.2 **QUALIFICATION HEATS:**
- a) If the host country wants to, and the facilities can accommodate 180 drivers, qualifying rounds can be up to 15 cars. This decision will be made by the Section Chairman, the Referee and the Race Director.
  - b) Each driver should be entitled to a maximum of 5 attempts at qualification, weather permitting.
  - c) Starting for qualifying will be with "Flying start". The track will be opened normally with a 3 minute warning to the start, this will be announced through the sound system, you will also get the time "2 minutes to start", "1 minute to start", "30 seconds to start" and "10 seconds to start". Deliberate stops waiting for the signal at the track and cutting the track to find a better position in it are infringements to be penalized unless otherwise authorized by common decision of the Race Director and the Referees communicated at the Team Manager Meeting  
The announcement: "Clock is running" will indicate that the heat has started.  
All qualifying runs and finals are ran by "time plus next lap" system.  
Qualifying heats are of 5 minutes duration.
  - d) All drivers will be entitled to a sub-final.
  - e) Heats will be run, normally, in the following sequence for the 5 qualifying rounds:  
Round 1: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15  
Round 2: 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 1, 2, 3  
Round 3: 8, 9, 10, 11, 12, 13, 14, 15, 1, 2, 3, 4, 5, 6, 7  
Round 4: 10, 11, 12, 13, 14, 15, 1, 2, 3, 4, 5, 6, 7, 8, 9  
Round 5: 12, 13, 14, 15, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
  - f) When the first car finish its qualifying time then no other car is allowed to exit the pit lane after being served by the mechanics.
- 2.3. **TIMED PRACTICE SYSTEM**
- a) The practice for drivers will only be run in the way of rounds in heat order. On Tuesday there will be at least 5 rounds of practice, all of at least 5 minutes track time. On Wednesday before the start of the 2 rounds of Reseeding there will be a "track shake-down round" early in the morning, only the Wednesday Reseeding rounds will count for reseeding. These rounds will be of 10 minutes duration with the last 5 minutes timed. Announced as rule



2.2. if needed. Best 3 consecutive laps inside the whole 10 minutes or the complete last 5 minutes may be used for reseeding purposes. The selection of the reseeding system is done by the Race Director, the Timekeeper and the Referees and must be clearly advised before the start of practice. Results of the timed practices will be published (laps and times). Points will be awarded according to the result selected for reseeding in each round. The best single point result scored out of these two rounds will be used to sort drivers by performance and to reseed them before the real qualifying rounds. In event of a tie second point result will be taken into account to solve the tie.

- b) Reseeding: After timed practice and subject to frequencies and common sense the top 24 drivers will be placed in the last 2 heats with correspondent number of each country up to a maximum of 5 drivers in each heat. The first 2 drivers take 1st place in the last 2 heat heats, next 2 in second place and so on. Use this system to include 144/180 drivers and avoid small teams being placed in the same heat. The sort out problems round after reseeding can be done either the afternoon immediately after the opening ceremony or early morning the next day.

#### 2.4. QUALIFYING SYSTEM

In each round drivers will score points based on laps and times achieved. Fastest competitor (based on laps & time) in each Round will score zero (0) points, second place 2 points, third place 3 points, fourth place 4 points and so on.

If two (or more) competitors achieve an equal time in any Round they will be awarded equal points. The next competitor not included in the tie will be awarded points corresponding to his position in the particular Round.

(NOTE: drivers not recording a time in any Round score points corresponding to the total of entrants to the event, not modifying other drivers result inside that round, failure to marshal at a round will result in a 16 place demotion that will be applied to the drivers final qualifying position when all qualifying has been completed.).

Overall Qualifying positions are decided by each drivers "best" (lowest) points being added together, based on the number of rounds to count. In the event of a tied position the driver with the single highest finishing position in either of the best Rounds that counted will be awarded the tie (eg. 1+3 = 4 beats 2+2 = 4). In the event of a continuing tie then the laps and times from the best points Round will be compared. The driver with the fastest laps and time will be awarded the tie. In the case of a continuing tie, then the times from the second best scores will be compared.

Out of 5 (five) completed rounds 3 (three) to count.

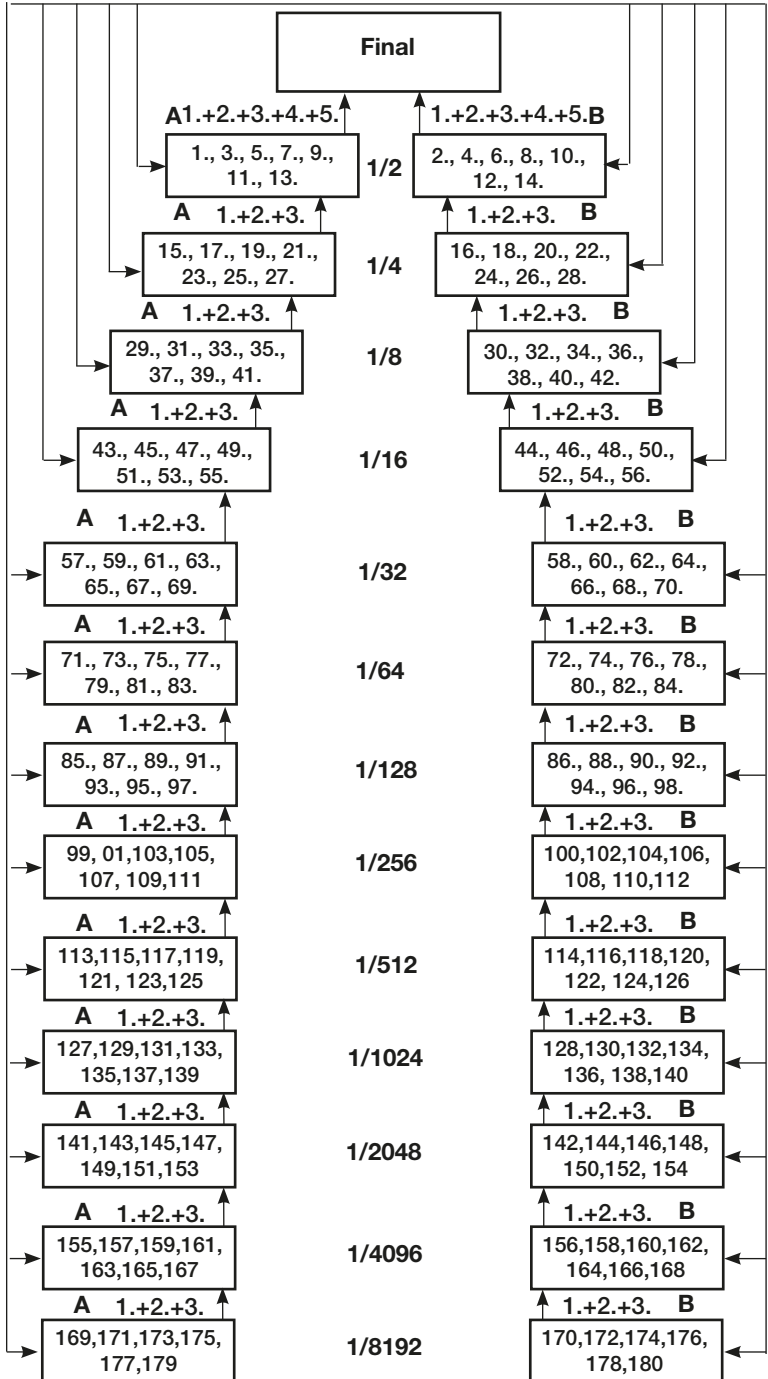
Out of 3 (three) and 4 (four) completed rounds 2 (two) to count.

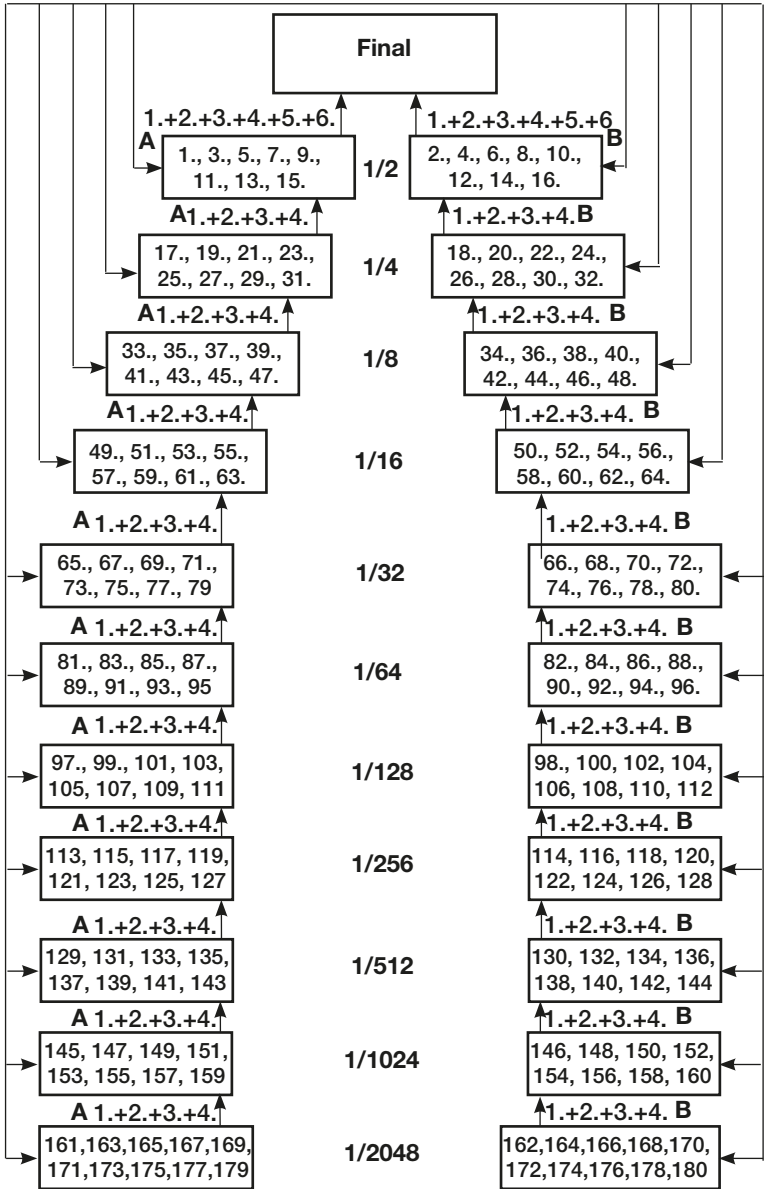
Out of 1 (one) and 2 (two) completed rounds 1 (one) to count.

#### 2.5. FINALS

All finals can be of 12 cars with 4 cars progressing to next final, and 6 cars from each semi final proceeding to Main A Final, together with a 13th car, that spot will be decided on a race of 15 minutes duration, after the first exhibition final.

Marshaling at ALL FINALS will be done either by one of this 2 systems or by a combination of both: 1.- By providing a marshall by each driver taking part in the final to cover the marshalling position of his car number, if there is no marshall then the driver can not race and must cover that empty position and/





or 2.- The driver marshal the precedent final of his side of the Christmas Tree with the non filled positions over 8 positions covered by the organizer, with same penalty for non present, not to drive later on.

"A" series sub-finals will be composed of Odd places drivers following qualification. "B" series sub-finals will be composed of Even placed drivers after qualification. Every qualifying driver must progress to the main final in accordance with the accompanying Christmas tree. All sub-finals up to and including 1/128th A and B will be of 15 minutes duration. Then from 1/64th to quarter finals 20 minutes, Semi-final A and B 20/30 minutes, the final should be 45/ 60 minutes. The top 3 (three) / 4 (four) from each up to the quarter finals progressing to the next sub-final and the first 5 (five) / 6 (six) from each semi-final progressing to the Main Final. After the finish of the quarter finals each semi finalist ("A" and "B") is entitled to 10 minutes practice time with numbers and appropriate radio frequencies (See attached Christmas tree). TQ driver after qualifying will have the right to practice in both semifinals. First semifinal to start no sooner than 15 minutes after the end of practices. If the first subfinal is 1/1024 or less then all subfinals will be 20 minutes duration. There will be an exhibition final for +40 drivers after the 2 semi finals and before the main final, length of the final will be 20 minutes. Drivers will qualify for that final according to their results achieved at qualification rounds, top 10/12 will have the right to compete in this final except those who have reached the semi finals.

There will be an exhibition final for under 17 drivers after the Masters40+ final before the main final, length of the final will be 20 minutes. Under 17 final is for all drivers who are 16 or younger on the 1st January of the year of competition. Drivers will qualify for that final according to their results achieved in the qualification rounds, top 10/12 will have the right to compete at this final. In the case of no under 17 driver in the main final, then the winner of the under 17 final will be the junior European Champion.

## 2.6. TIMETABLE

The timetable for E.C. shall be as follows: The Race Organiser should schedule all events for each day to be completed and the track closed by 20:00. Maximum daily activity at the track to be 12 hours.

TUESDAY	A.M. Registration & Technical Inspection + 1st & 2nd rounds Timed Practice (5 minutes) P.M. 3rd, 4th & 5th rounds Timed Practice (5 minutes)
WEDNESDAY	Early in the morning shake-down round + from 10:00 2 Reseeding rounds (10 minutes) P.M. OPENING CEREMONY Reseeding of drivers from Reseeding round points. Top 24 in last 2 heats 25-48 in next preceeding 2 heats 49-72 in next preceeding 2 heats 73-96 in next preceeding 2 heats 97-120 in next preceeding 2 heats 121-144 in next preceeding 2 heats 145-180 in first 3 heats 1 round of timed practice in the new reseed groups to sort out problems
THURSDAY	3 rounds qualifying
FRIDAY	A.M. 2 rounds qualifying P.M. 1/8192 Finals A & B (A is run first)



1/4096 Finals A & B  
1/2048 Finals A & B  
1/1024 Finals A & B  
1/512 Finals A & B  
1/256 Finals A & B  
1/128 Finals A & B

SATURDAY 64 Finals through to "A" Final  
Final to commence 15.30

Official Prize Giving Ceremony to be held after Main Final at a time to be announced by the Organisers.

2.7 **DRIVING FORMAT FOR 1:8 OR ELECTRIC FOR EUROPEAN CHAMPIONSHIP**

2.7.1 QUALIFICATION HEATS Like rule 2.2

2.7.2 TIMED PRACTICE SYSTEM

a) The practice for drivers will only be run in the way of rounds in heat order.

On Friday there will be 5 rounds of practice, 1st, 2nd & 3rd of 5 minutes duration and a 4th and 5th of 10 minutes track time if possible. The two (2) last rounds of controlled practice, (named as 4th & 5th previously) will count for reseeding and be known as Reseeding Round 1 & 2. These rounds will be of 10 minutes duration. Results of the timed practices will be published (laps and times). Points will be awarded according to the result selected for reseeding in each reseeding round. The best single point result scored out of these two rounds will be used to sort drivers by performance and to reseed them before the real qualifying rounds. In event of a tie the best time and laps out of the counted result will be taken into account to solve the tie..

b) Reseeding: After timed practice and subject to frequencies and common sense the top 24 drivers will be place in the last 2 heats with equal number of each country up to a maximum of 5 drivers in each heat. The first 2 drivers take 1st place in the last 2 heats, next 2 in second place at each heat and so on. Use this system to include 120/144 drivers and avoid small teams being placed in the same heat. The sort out problems round after reseeding can be done alternatively Friday afternoon after the opening ceremony or early Saturday morning.

2.7.3 QUALIFYING SYSTEM Like rule 2.4

2.7.4 FINALS 12 fastest drivers will qualify for A-final.

Drivers placed from 13 to 25 will be placed to B-final.

1-12 → A-final

13-25 → B-final

26-37 → C-final

38-49 → D-final

50-61 → E-final

62-73 → F-final

74-85 → G-final

Finals will start with the last chance final for drivers qualified to B final.

All finalists entitled to a practice final except those at the B final that run the last chance final.

There will be 13 drivers and the fastest will bump up to A-final, 13th position on the grid. From there the finals will run from lower finals towards A-final. Duration of finals will be 10 minutes. All finals are run 3 times, counting 2 fastest by points. The winner of a final gets 1 point; the second gets 2 points and so on up to 13 points for the 13th driver. In the event of a tie regarding time in a Final, the points will be equally awarded to each driver and the next

driver not tying will be two points more. In the event of a tied position the driver with the single highest finishing position in either of the best 2 finals that counted will be awarded the tie. In the event of a continuing tie then the laps and times from the highest finishing position will be compared. In the case of a continuing tie, then the times from the second best position will be compared. When some drivers of a final do not run a final, they will be awarded maximum points +1. If final rounds are cancelled due to weather conditions or unforeseen circumstances, 1 out of 1 or 1 out of 2 rounds is calculated.

Only at FINAL A: 240 seconds (4 minutes) of time-out to be requested up to 30 seconds to the start, only for mechanical problems (to be verified by the race director) and only one time per leg and the driver asking for time will be placed last on the starting grid at that A final leg. The other cars must remain at parc ferme (as indicated by the race director). The remaining cars are allowed to be switched off only.

Only at FINAL A: 240 seconds (4 minutes) of time-out to be requested up to 30 seconds to the start, only for mechanical problems (to be verified by the race director) and only one time per leg and the driver asking for time will be placed last on the starting grid at that A final leg. The other cars must remain at parc ferme (as indicated by the race director). The remaining cars are allowed to be switched off only.

#### 2.7.5 TIMETABLE

Friday: Registration and technical inspection 3 rounds of free practice 5 minutes of duration 2 rounds of timed practice for reseeding, 10 minutes in duration Opening ceremony Sort out problem round (if needed)

Saturday: 5 rounds of qualifying Sunday Last chance final 3 rounds of finals Exhibition final (youth and/or +40) Price giving ceremony All days recommended to end by 18:30.

### 3. TRACK

Minimum Width: 4 metres with 25 cm tolerance, and a possible exception for 10-12 meters chicane with a minimum there of 3 meters wide.

Minimum Length: 250 metres

#### 3.1 SURFACE

Artificial surfaces should be of the same type used for road construction.

They must not be potentially dangerous or pollutant.

Within the total length of the track 50 percent (50%) minimum must be from natural soil.

Any section made from artificial surface must not be longer than ten (10) metres. A natural soil section must always separate two (2) artificial surface sections.

At place of the lap counting antenna, there must not be any metallic structure. Deterioration of the natural soil area must not uncover obstacles in the transit area between natural soil and artificial surface (overlapping slope must be smooth and of sufficient length).

The track must be suitably drained.

#### 3.2 JUMPS AND OBSTACLES

Their sizes must be in relation with the scale of the car.

#### 3.3 SAFETY

Safety for everybody must be the most important aspect when designing a track and at every moment while race is on progress. All non authorised people will have to leave the track area when the call 1 minute to start is given. Press and media will be informed of this rule by the organizer.

### 3.4 MAINTENANCE

The track surface may only be repaired at the following moments:

Any time at the end of any practice round during practice days, and after the practice and before the qualifying rounds.

At the end of day one of qualifying.

At the end of qualifying and/or at the end of the second day of qualifying.

The Race Director can authorise repairs, if he considers the track to be unsafe at any time with the agreement of the referees.

### 3.5 OTHER TRACK SPECIFICATIONS

3.5.1 A pit lane must be provided that has a convenient and safe entrance and exit to and from the racing surface. It must be separated from the racing surface by a secure barrier. There must be a second barrier of at least the same specifications of the outer barrier between the pit lane and the working pit areas. The design of the pit lane access and exit must be done to prevent high speed racing at the pit-lane.

3.5.2 All refuelling, repairing, or servicing of cars must be accomplished with the vehicle fully behind the barrier between the pit lane and the working pit area, and not in or over the pit lane. Cars may be placed on top of the pit wall for servicing provided the wall has been designed so that the car is secure and stable.

## 4. RACE PROCEDURES



Race procedures shall be as follows with the addition of the non contradictory rules of section 4 of Appendix 1 up to 4.9, basically part of 4.1 (mechanics position), rule 4.3 , rule 4.7.7 to 4.7.11 and rule 4.9 . It is forbidden to cut the track during the warm-up minutes unless otherwise advised and it is forbidden to overtake while the formation lap is on progress (if existing). It is not allowed to the mechanics go to or to come back from the starting grid when count down has started, penalty for that is a 10 seconds stop & go.

For all finals & qualifying, drivers with the lowest starting numbers may choose their position on the rostrum (at qualifying to be chosen only 1 time previously to its start) and the mechanics must stand under the driver where this is possible or in the same order.

In case a race cannot be completed for whatever reason the final ranking will be made as follow:

Ranking of sub finals will be used up to the level where the last pair of sub finals A & B have been run.

Above that level, for the remaining drivers, the qualification ranking will be used.

	<b>A</b>	<b>B</b>	
Final	Not Raced	Not Raced	 Ranking Qualification
....	Not Raced	Not Raced	
Sub Final N	Raced and void	Not Raced	
Sub Final N-1	Raced	Raced	 Ranking Sub finals
....	Raced	Raced	
Sub Final N-x	Raced	Raced	

Parc Fermé:

All cars of the the first semi-final will be impounded in parc fermé during the

later semi-final. All cars of both semi-finals will be released at the same time.

Delayed Start:

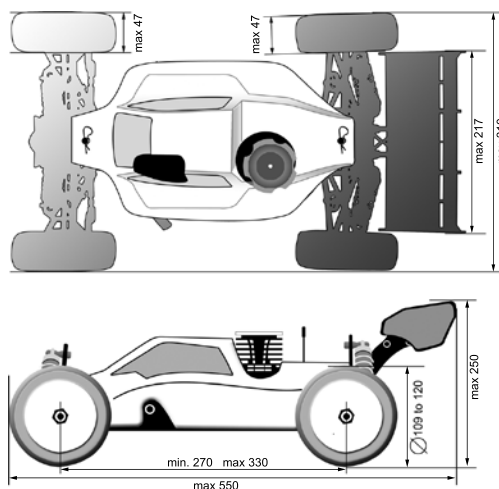
As long as the starter has not called the cars to the start line (30 seconds to the start call), every participant of the semi-finals and the final may request a delay of ten (10) minutes for repairs on his car. The delay will be granted only once for each semi final and main final. The track shall be closed to all cars during the delay period. The driver that asked for the delay has to start last from the startgrid (11th or 13th position). At the Chart, the one raced and void must be the A side, first column (we always race A first).

- 4.1 The track for a European Championship MUST be either newly built or repaired to a 50% new layout before the day it is open for the main event practice. Whether the track is a new track made for the event or an existing track it can not be open to drivers for practice before the day the official practice is scheduled. The National Federation and the organising Club must forbid any use of this track 4 weeks before the event. One car may be run by the event organisers for a maximum of 20 minutes, to prove the suitability of the new layout.
- 4.2 For Electric 1/8th all finals will use a "Le Mans" or "F1" type grid start, with a minimum of 3 meter alternating intervals with two rows of cars. Cars must be placed forward facing to their markerline or start box.  
If F1 start is used, then the Top Qualifier shall choose if the first car on the grid shall start on either left or right side and shall be used for all finals.

## 5. TECHNICAL SPECIFICATIONS

4 WD 1:8 OFF ROAD CARS

### 5.1. GENERAL DIMENSIONS



- Overall length 550 mm maximum
- Overall width 310 mm maximum with the car standing over 27 mm blocs
- Wheelbase 270 - 330 mm.
- Overall height measured from the ground including rollbar with full suspension compression 250 mm. maximum (this measurement does not include the receiver aerial).

- e) Minimum weight is 3.200 kg for 4 WD.
- f) No other function than steering and throttle/brake are allowed to be operated with the Radio Control by the driver. Any other electronic system placed in the car different than the personal transponder and a possible switch on-off is not allowed with the sole exception for the Electric cars of its Motor, the Speedo and Fans.
- g) Wheel overall diameter must be between 109 and 120 mm. Wheel overall width 47 mm maximum.
- h) Measuring equipment for width, length and height should be constructed preferably from metal or alternatively high quality board. The materials will be of suitable thickness to eliminate any distortion.
- i) The front of the vehicle chassis must be equipped with a plastic bumper (no metal at all) in such a manner that it will minimise damage in the case of it entering into contact with other participants, marshals or any person. The bumper must be made from flexible material (plastic) with all corners and sharp edges rounded off. If a rear bumper is used it must follow the same principles.

## 5.2. ENGINES & TANK

- a) Internal combustion engines with maximum capacity 3.5 ccm.
- b) Fuel tank capacity: 125 ccm including all piping tubes and filter up to the carburettor.  
The tank shall be measured using the official EFRA measuring cylinder or in the event of damage to the official cylinder, a cylinder to DIN standard.
- c) The capacity of the fuel tank must not be adjusted by insertion of any loose object
- d) Any tank found illegal (>125 ml) after a heat or final shall be removed from the car and inspected for a second time after an initial "cool down period" of 15 minutes. This period of 15 minutes is only necessary in case the track air temperature is above 20° C.

## 5.3. SILENCER

- 5.3.1 Each engine must be equipped with an exhaust system and inlet silencer to reduce the amount of noise generated by the car.

The maximum noise level for a muffler with INS box is 83 dB's, measured at ten (10) metres distance and one (1) metre high for a single car.

EFRA's definition of a noise level is always final.

Only EFRA homologated mufflers published for the season are allowed on EFRA sanctioned events. The EFRA homologation number must be engraved/laser marked on the sidewall of the muffler.

- 5.3.3 EFRA may noise test any car at any time during the event. EFRA noise testing equipment will make all tests regarding noise levels. EFRA's definition of noise is final. From 2017 when the noise trap is in use penalties may be given at qualifying (loss of the drivers best result) or finals (minus 1 lap on the final).

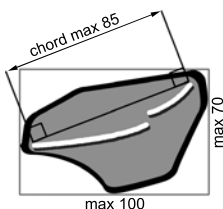
## 5.4. TYRES

All tyres must be black with the exception of side wall lettering and a side wall dot circle (max. 7mm) or a thin line (max. 3mm) to indicate the hardness of the compound. The application of any additives within the event perimeter is strictly forbidden. The penalty for that is immediate disqualification.

No spikes, tubes or additional items intended to increase traction may be either glued to the outside of tyres or passed through tyres from the inside. All EFRA ECs on 3 days scheme can be run under a designated wheel (insert, tyre and wheel to be the same for all drivers) system, no use of tyre additives are allowed at all.

## 5.5. WINGS

The rear wing with a maximum overall size 217 mm length and a chord of no more than 85 mm may be fitted. -The multiplane wings are authorized -The width of 85 mm is measured between the lower leading edge and the higher trailing edge. The side dams of the wing must have the IFMAR dimensions: "The side dams of the wing must have a maximum horizontal width of 100 mm and a maximum height of 70 mm. (irrespective of the orientation)



The side dams must be able to contain a square area of minimum 40 mm width and a minimum height of 50 mm to place the car identification numbers".

- The single of multiplane wing must be registered inside the contour of the side dams.

- A front wing, in between the front shock absorber holder and the front of the body-shell is valid, on condition to be made of Lexan or equivalent material (carbon fibre is forbidden) and that it is cut so as not to injure a marshal who may take the car by the front. No sharp angles are allowed, all angles must be rounded. All other front wings are prohibited, wings on wishbones are prohibited. There will be no other aerodynamic aid to the body-shell other than the 2 wings allowed here.

- The wing and the side dams must be made out of flexible material, no carbon fibre, with angles rounded.

## 5.6. APPEARANCE

- a) Cars shall be a reasonable representation of the style of car used for offroad, desert or trial racing.
- b) Full bodyshells of saloon style are permitted but may only be trimmed to expose a maximum of 50% of the tyres at full suspension depression. If such bodyshells are fitted, provision for trimming shall be as in Section 5.6d.
- c) Where a roll-cage is fitted, an open wheel style bodyshell must be fitted underneath the cage so designed as to enclose R/C equipment and fuel tank with sufficient front and side areas to allow clear display of racing numbers.
- d) Openings may be cut in the shell for the mounting posts, the antenna and the pipe ends and to allow access to fuel filler, switch, and engine adjustments, and a maximum of a third of the wind screen to assist in cooling the engine if not already opened by the fuel tank access. **Clearance around such items shall be kept to a minimum.** The front and rear ends of the shell must retain some of the original profile of the two ends of the shell.
- e) The car parts holding the car identification number must be fitted, if it becomes loose or detached it must be fixed in the immediate next lap. "Acceptance of a saloon bodyshell by another EFRA Section shall be deemed to simply approval by the Off-Road Section for racing purposes".

- 5.7. 1/8th Offroad all European Championships should only use 16%EU. Fuel may only contain methanol (methyl alcohol) CAS number 67-56-1), lubricating oil, a small content of anticorrosion chemicals and maximum 16% of nitro methane (Cas number 75-52-5) IN WEIGHT (not in volume). The specific gravity of the mixture may not be heavier than 0.859 grams/cc at 20°C and standard atmospheric pressure. For quick testing a Nitromax 16EU can be used, but in case of failure with the Nitromax an official density meter must be used to control the specific gravity of the fuel including the temperature recorded during the



test. A specific table will be produced to report the density (gr/cc) based on the temperature (from 0 to 50°C) The tolerance on the measurement will be +/- 0.5% based on the data reported in density table. Any violation with fuel which means any proof of the use of other additives as mentioned will mean 5 years of disqualification from any EFRA and IFMAR event. If an EFRA Event is to be run at a Country which permits the use of a heavier content of nitro methane (up to 25 % in volume) and the Organizer can ensure EFRA and the participants its supply track side, then the first part of the former 5.7 rule wording will enter in force: "Fuel may only contain methanol (methyl alcohol) CAS number 67-56-1), lubricating oil, a small content of anti-corrosion chemicals and maximum 25% of nitro methane (Cas number 75-52-5) in volume. The specific gravity of the mixture may not be heavier than 0.91 grams/cc at 20°C and standard atmospheric pressure. For quick testing a Nitromax 25 can be used".

## 5.8 Electric 1/8th Technical

### 5.8.1 MOTORS:

Can : Maximum overall length is 77.00 mm measured from the mounting face of the motor to the furthest most point of the end bell, not including solder tabs, lead wires or original manufacturer's logo or name. Motor mounting holes must be on 1.00- inch (25.40mm) centers.

Stator: Motor stator maximum outside diameter is 39 mm.

Rotor: External shaft diameter shall be 5mm with a maximum 12-slot stator.

### 5.8.2 BATTERIES:

1/8 Scale Electric Off-Road Cars will be driven by Lithium based batteries with a nominal voltage of no more than 15.2 volts (4S). It is allowed to use 2 x 2S or 4 x 1S. If multiple individual batteries are connected together (in parallel or series), then all batteries used must be of the same manufacturer brand and same Part Number.

Only homologated batteries shown on the EFRA Approved Lists on the official EFRA website will be legal for use at EFRA sanctioned events.

All Lithium Batteries must comply with the published data shown on the EFRA Approved Battery Lists. Batteries that are not compliant with the dimensional rules or published weights will not be allowed.

LiPo/LiFe drive batteries must be in 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. Anybody not doing this will be penalised at the event. 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.

**The maximum charging cut-off voltage is 4.20v per. cell in series (16.80v for 4S). Organisers can check this voltage at any time during the event.**

**All Rules concerning:- Technical Specifications, Race Procedures, Homologation Procedures, for Lithium Batteries can be found in NEW APPENDIX 4.**

TRANSMISSION AND DRIVE:

- Single speed transmissions only
- 4WD
- No reverse mode allowed.

### 5.8.4 BODYSHELLS

Body Style: The body has to be able to carry the EFRA Numbers at the front and both sides as high as possible, the wing sidedams plates are also a valid place for side numbers. The body has to have a real car shape.

Body shell holes/vents: Only 9 ventilation holes with a maximum diameter of 10 mm, the body mounting holes and one small hole for the antenna are allowed.

Windows are not allowed to be removed. All Gears and connectors must be covered from above.

#### 5.8.5 SPECIAL ELECTRIC SAFETY RULES

At Technical inspection it will be checked that no battery shows any deformity or manipulation. Batteries have to be firmly attached and protected by the chassis or body.

Maximum voltage before any run 16:80 v before the start of the run.

### 6. NATIONS CUP

At every European Championship A&B EFRA will hold a Nations Cup, with drivers competing as a team representing their countries. Before the start of the official qualifying rounds each Team Manager will provide the Race Director with a maximum of four (4) names of drivers which will represent their country at this Nations Cup. Out of this four drivers the best result in points according to their final position achieved of the best three (3) of them will be added together and give the result of their National Team.

### 7. TROPHIES

The organiser must furnish, at least, the following trophies for the prize giving ceremony:

- Appropriate trophy for positions 1-2-3 at the 4 standard classifications, Absolute final, Female results, under 17 final and over 40 final.
- Trophy for the winner of each other electric final.
- Trophy for positions 4-13 of the Absolute final classification.
- TQ Trophy, to be presented after classification is completed.
- 3 pairs of plates for the Mechanics of positions 1-2-3 of the Absolute final classification EC A and EC B.
- 3 set of 5 plates to the Nations Cup positions 1-2-3. EC A and EC B
- 1 Trophy for the manufacturer of the winner car at the EFRA EC A
- 1 Trophy for the manufacturer of the winner engine at the EFRA EC A
- 1 Trophy for the manufacturer of the winner tires at the EFRA EC A

### 8. EFRA RANKING LIST 1/8 BUGGY

A general classification shall be published at the end of the racing season.

The sum of the 4 best results in points of the last 3 seasons to be the final score of each driver. Points shall be given as follows:

EFRA GP1 (Less than 30 drivers)

50	46	42	38	34	32	30	28	26	24
22	21	20	19	18	17	16	15	14	13
12	11	10	9	8	7	6	5	4	3

EFRA GP2 (30 to 60 drivers)

75	71	67	63	61	59	57	55	53	51
49	48	47	46	45	44	43	42	41	40
39	38	37	36	35	34	33	32	31	30
29	28	27	26	25	24	23	22	21	20
19	18	17	16	15	14	13	12	11	10
9	8	7	6	5	4	3	2	1	1

EFRA GP3 (60 drivers plus)

100	96	92	88	84	82	80	78	76	74
73	72	71	70	69	68	67	66	65	64
63	62	61	60	59	58	57	56	55	54
53	52	51	50	49	48	47	46	45	44
43	42	41	40	39	38	37	36	35	34
33	32	31	30	29	28	27	26	25	24
23	22	21	20	19	18	17	16	15	14
13	12	11	10	9	8	7	6	5	4
3	2	1	( 1 for places greater than 83)						

## EUROPEAN CHAMPIONSHIP

300	280	260	240	220	210	200	190	180	170
165	160	155	150	145	140	135	130	125	120
115	110	105	100	99	98	97	96	95	94
93	92	91	90	89	88	87	86	85	84
83	82	81	80	79	78	77	76	75	74
73	72	71	70	69	68	67	66	65	64
63	62	61	60	59	58	57	56	55	54
53	52	51	50	49	48	47	46	45	44
43	42	41	40	39	38	37	36	35	34
33	32	31	30	29	28	27	26	25	24
23	22	21	20	19	18	17	16	15	14
13	12	11	10	9	8	7	6	5	4
3	3	3	3	3	3	3	3	3	3
2	2	2	2	2	2	2	2	2	2

1 for places greater than 140

## WORLD CHAMPIONSHIP

500	450	400	350	320	290	260	230	200	170
160	155	150	145	140	135	130	125	120	115
110	105	100	95	90	89	88	87	86	85
84	83	82	81	80	79	78	77	76	75
74	73	72	71	70	69	68	67	66	65
64	63	62	61	60	59	58	57	56	55
54	53	52	51	50	49	48	47	46	45
44	43	42	41	40	39	38	37	36	35
34	33	32	31	30	29	28	27	26	25
24	23	22	21	20	19	18	17	16	15
14	13	12	11	10	9	8	7	6	5
4	4	4	4	4	4	4	4	4	4
3	3	3	3	3	3	3	3	3	3
2	2	2	2	2	2	2	2	2	2

1 for places greater than 140

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