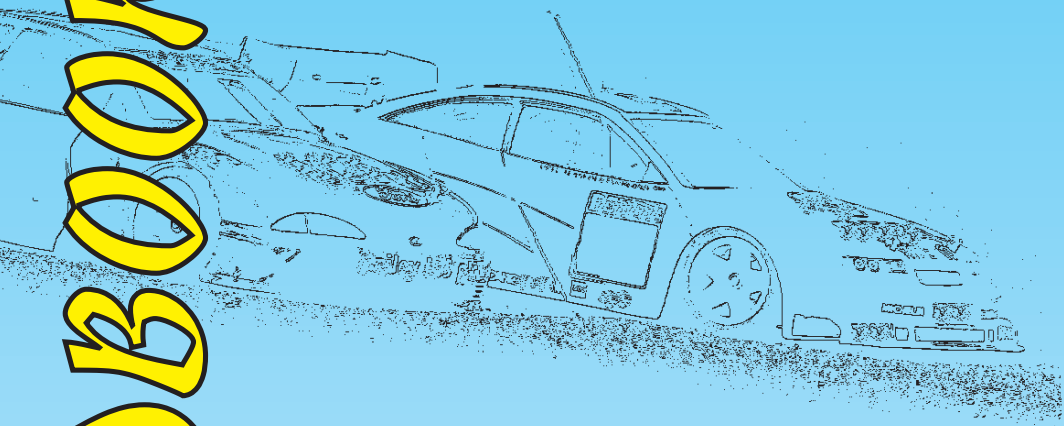


HANDBOOK 2009



Appendix 2



*European Federation of
Radio-Operated
Model Automobiles*

APPENDIX 2

1/8th SCALE IGNITION 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 table.

	GP	EC B	EC A	EC A+
Days	Fri./Sun.	Fri./Sun.	Mon./Sat.	Mon./Sat.
Min/MaxNb of drivers	120 max	120 max	130/150	150/180
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 July
Compulsory License	EFRA or National	EFRA	EFRA	EFRA
Allocation	NO	YES	YES	YES
Restrictions	NO	See 1.5	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.
- 1.3. For allocation and re-allocation procedures see 3.6. and 6.2.
- 1.4. If a driver has not registered by midday on the first day of the event, then his place will be re-allocated unless that driver has contacted the organizer to explain his reason for not registering
- 1.5. A 4WD European Championship for B Class drivers may be organized each year. Entries will not be allowed for drivers who have ranked in the first fifty (50) places 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. 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: March 30th and May 30th each year.

2. RACING FORMAT EUROPEAN CHAMPIONSHIPS AND G.P.

- 2.1 The GP and the European Championship for B class drivers 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 re-seeding of the heats will only be done in case of clear necessity on the criteria of the R.D. and Referee.

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 re-seeding 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 no later than the GP prior to the event.
- 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 with a 3 minute warning to the start, this will be announced through the sound system, you will also get the time "1 minute to start", "30 seconds to start" and "10 seconds to start".

The announcement: "Clock is running" will indicate that the heat has started.

- d) All drivers will be entitled to a sub-final.
- e) Heats will be run 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: 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 1, 2, 3, 4, 5
Round 3: 11, 12, 13, 14, 15, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10,
Round 4: 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 1, 2, 3, 4, 5
Round 5: 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1.

2.3.

TIMED PRACTICE SYSTEM

- a) The practice for drivers will only be run in the way of three rounds. 1st round 15 minutes duration and only the 2nd and 3rd practice will count for reseeding. These rounds will be of 10 minutes duration with the last 5 minutes timed. Announced as rule 2.2. Best 3 consecutive laps inside those last 5 minutes may be used for reseeding purposes. The selection of the reseeding system is done by the race director and must be clearly advised before the start of practice.

Results of the times practice will be published (laps and times). Points will be awarded according to the result selected for reseeding in each round. The best point results scored in these two rounds will be used to sort drivers by performance and to reseed them before the real qualifying rounds. After time practice and subject to frequencies and common sense the top 50/60 drivers will be placed in the first 5 heats with equal number of each country up to a maximum of 4 drivers in each heat.

The first 5 drivers take 1st place in the first 5 heat heats, next 5 in second place and so on. Use this system to include 130/180 drivers and avoid small teams being placed in the same heat.

- b) Only timed practice in heats must be allowed.

2.4.

QUALIFYING SYSTEM

In each round drivers will score points based on laps and times achieved. For all rounds the maximum number of points given to the fastest driver will be equal to the number of drivers participating to the EC + 5 (five).

2nd fastest will score the maximum minus 2 (two) points.

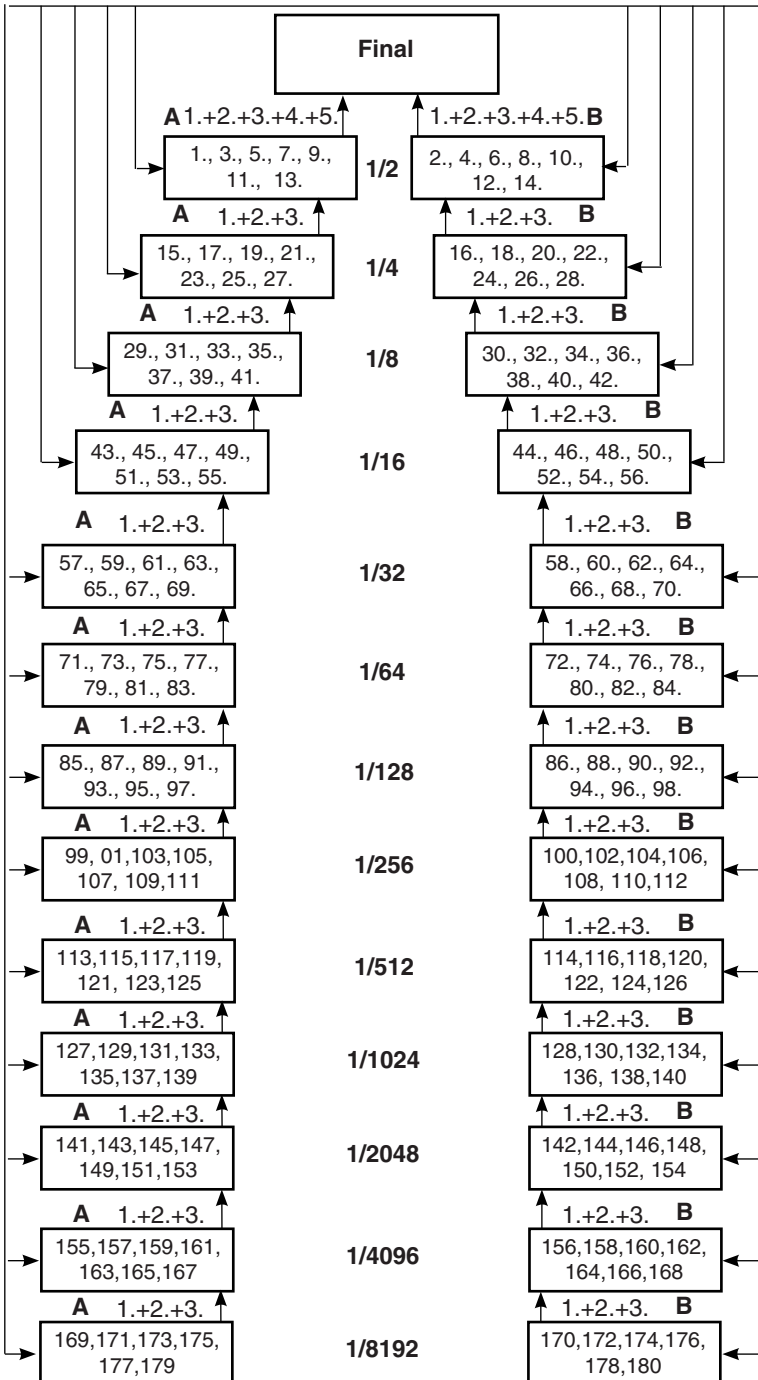
3rd fastest will score the maximum minus 3 (three) points.

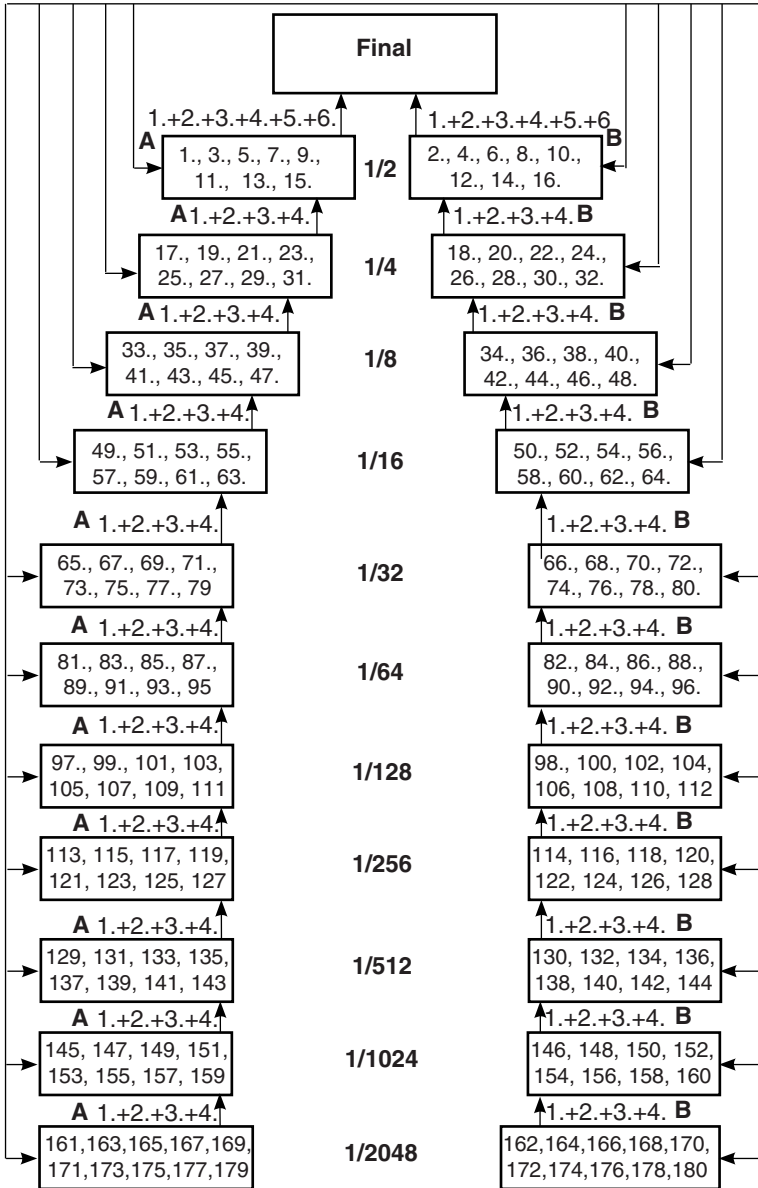
Down to the last position one by one.

If a driver has not completed a lap, no points will be awarded in that round.

In every round in the event of a tie the points will be equally awarded to each driver and the first driver not tying will get one point less.

In the case of two or more drivers having the same points score the next best score determines position. If still unable to resolve with the next best rounds





SATURDAY

1/64 Finals through to "A" Final

Final to commence 15.30

Immediately after the finish of the Main Final and before drivers leave the drivers rostrum, the unofficial winner must be declared for the public and a symbolic first place award is presented. This award must be returned to the Organisers immediately after the unofficial ceremony.

Official Prize Giving/Reception/Banquet to be held after Main Final at a time to be announced by the Organisers. Banquet Tickets to be sold in advance if such existing.

3. TRACK

Minimum Width: 4 metres

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 when obtaining their press pass.

3.4 MAINTENANCE

The track surface may only be repaired at the end 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 for sections 2 & 3 & 4 of Appendix 1 up to § 4.8 included.

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.

	A	B	
Final	Not Raced	Not Raced	↑ Ranking Qualifikation
....	Not Raced	Not Raced	
Sub Final N	Not Raced	Raced and void	
Sub Final N-1	Raced	Raced	↑ Ranking Sub finals
....	Raced	Raced	
Sub Final N-x	Raced	Raced	

Parc Ferme:

All cars of the the first semi-final will be impounded in parc ferme 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, 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 have to start last from the startgrid (11th position).

4.1 The track for a European Championship MUST be either new or repaired new before the day it is open for 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.

4.2 Unless the hosting club does not provide Marshals, Marshalling during practice and qualifying is done by the drivers, (only drivers participating must marshal due to insurance implications) who would marshal the race after their own and so on. For finals large teams provide the most marshals, maximum 2, smaller teams 1 and very small teams none. (But may volunteer to help) The marshal on designated points marked by their country names. Team Managers to insure that these points are covered at all times by drivers.

5. TECHNICAL SPECIFICATIONS

4 WD 1:8 OFF ROAD CARS

5.1. GENERAL DIMENSIONS

- a) Overall length 730 mm maximum
- b) Overall width 310 mm maximum
- c) Wheelbase 270 - 330 mm.
- d) 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 and 2,5 kg for 2 WD cars.
- 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 is not allowed.
- g) Wheel overall diameter must be between 109 and 120 mm. Wheel overall width 47 mm. maximum
- h) The car shall be measured for width by placing it on a flat base material equipped with two side rails of 120mm height. These shall be spaced 310mm apart and constructed in such a way that the car can roll freely between them. The base material must be constructed of high quality components suitably stiffened to prevent distortion. The flat base shall be placed with an inclination of 20°. The car must roll forward freely between the side rails with any steer able wheels set in the straight ahead position irrespective of the compression, extension or roll angle of the suspension.

5.2. ENGINES

- 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 and fuel line up to the carburettor found to be illegal (more than 125,00 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 fifteen (15) minutes. This "cool down" period is only necessary in the case of air temperatures above 20 degrees Celsius.

5.3. SILENCER

5.3.1 Each motor must be equipped with an exhaust system and an 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 3-chamber mufflers are allowed on EFRA sanctioned events. The EFRA homologation number must be engraved on the sidewall of the muffler.

The use of the 3000 series of mufflers is allowed, the manifolds are free.

The use of partly the mufflers of the 2007 list, from i.e. EFRA2040 till 2060, with or without an extra silencing unit. EFRA will do some tests to search for the better mufflers and give a list for the season 2009.

Use of any new 3100 series of a minimum of 2-chamber mufflers which are equipped with an extra silencer or comply to a far better noise level as the 3000 series.

5.3.3 EFRA may noise test any car at any time during the event

5.3.4 EFRA noise testing equipment will make all tests regarding noise levels. EFRA's definition of noise is final.

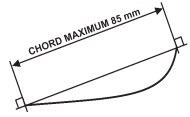
5.4. TYRES

All tyres must be black with the exception of side wall lettering, and the application of any additives is strictly forbidden.

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.

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.

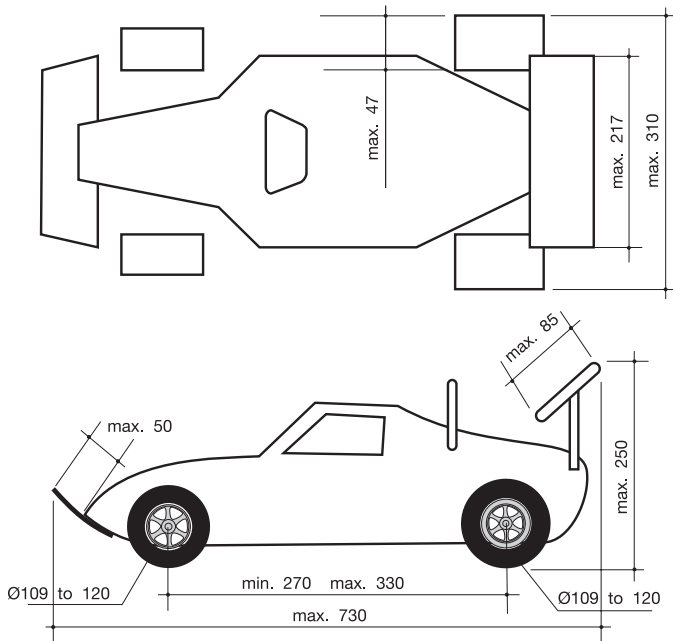


5.6. APPEARANCE

- Cars shall be a reasonable representation of the style of car used for offroad, desert or trial racing.
- 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.
- 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.
- Openings may be cut in the shell for 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 to be kept to a minimum.

"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. SAFETY

Marshals shall be provided with suitable protective gloves to minimise the risk of injury when coming into contact with the moving parts of the car.

2 WD 1:8 OFF ROAD CARS

5.8. TRANSMISSION

- a) The car shall be fitted with 4 wheels.
- b) Power may be transmitted only via the Front or Rear wheels. Where there is the possibility of choice, the choice must be made before the Technical Inspection and the choice noted by the Controlling Official. Under no circumstances may the choice be changed during the race meeting.
- c) No Gear Box or alternative means or obtaining a variable transmission ratio between clutch and driven wheels may be fitted.
- d) Brakes may only operate on the driven wheels.

6. **NATIONS CUP**

At every European Championship 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 position achieved of three (3) of them will be added together and give the result of their National Team.

7. **TROPHIES**

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

- Appropriate trophy for positions 1-2-3 at the 3 standard classifications, Absolute final, under 17 classification and over 40 final.
- Trophy for positions 4-20/24 of the Absolute final classification.
- TQ Trophy, to be presented after classification is completed and returned for the final ceremony.
- 3 pairs of plates for the Mechanics of positions 1-2-3 of the Absolute final classification
- 3 set of 5 plates to the Nations Cup positions 1-2-3.

The Trophy of the Nations cup will be kept in deposit by the Winner national association and returned before the start of the next European Championship.