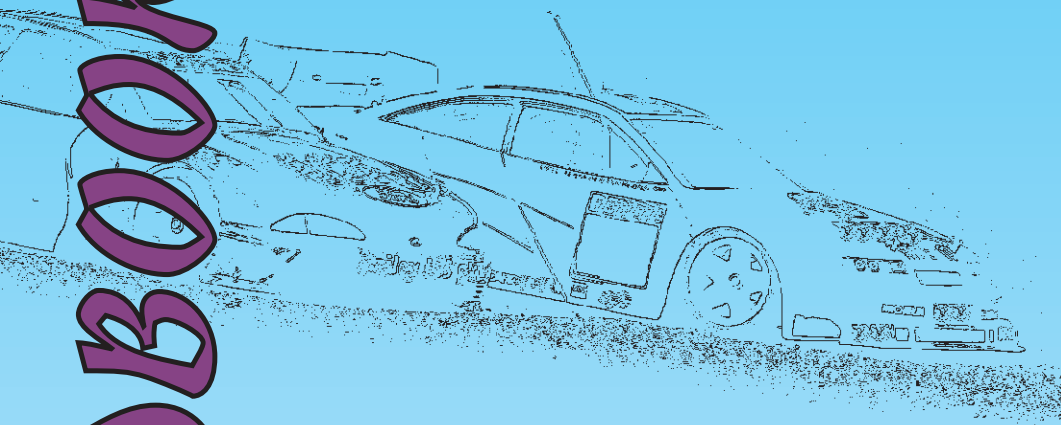


HANDBOOK 2007



*European Federation of
Radio-Operated
Model Automobiles*

APPENDIX 1

1/8th SCALE IGNITION TRACK CARS

1. ALLOCATIONS FOR EUROPEAN CHAMPIONSHIPS

- 1.1. The allocations for the EFRA European Championships 1:8 scale will be established by the section meeting and published in the minutes.
- 1.2. For allocation and re-allocation procedures see 3.6. and 6.2.
Allocations will only be offered for EC and WC events to those member countries that have written to request places.
- 1.3. All countries receive re-allocated places in the order of the Allocation-list, unless stated otherwise in this list.
- 1.4. The number of entries for EFRA European Championships is 120 with a maximum of 150. Accommodations for at least 120 drivers must be available. If the number of entries exceed 120, the accommodation must be sufficient for all participants.
- 1.5. Applications for all EC's must be done in writing by using the applications forms to be presented at the annual AGM section meeting

2. RACING FORMAT EFRA EUROPEAN CHAMPIONSHIPS AND GRAND PRIX

- 2.1. European Championships are held in following classes:
 - a) The European Championship Sportscars/GT-P/Group-C will be held on the 4th weekend of July. In the year there is an IFMAR World Championship outside the EFRA bloc than dates between EC and WC must separated with at least 4 free weekends between the finals.
In the years there is an IFMAR WC in the EFRA bloc there will be no EC-A (see schedule IFMAR, next WC 1:8 IC track will be 2009 and 2017)
It will be open to EFRA "A" and "B" licensed drivers. EFRA "A" licensed drivers should have preference.
One special EFRA medal will be awarded to the fastest driver under 17 year. So everybody of 16 years during the race dates, or younger can compete for this medal.
 - b) The B-European Championship will be held on the last weekend of May and will be open to:
EFRA "B" licensed drivers 1:8 scale IC track.
EFRA "B" licensed drivers 1:10 / 200 mm IC track (If accepted from 2007 on)
Not allowed to drive are furthermore: Top 10 from previous years EC 200 mm Electric, IC track 200 mm, Large scale, Off-Road 1:8 scale, Electric Off Road and EC-B.
Participation in this event will not effect the ranking list. The winner of this championship will be EFRA "A" licensed immediately after this race. At this event the same body as the EC-A will be used.
One special EFRA medal will be awarded to the fastest driver under 17 year. So everybody of 16 years during the race dates, or younger can compete for this medal.
 - c) The EFRA ranking list is based on the last 2 EC's, the last WC and the best result of one GP in the past year. An EC result is the result of the Sportscars/GT-P/Group-C EC from July. The total result of this list will decide upon A and B licence at the end of the season. For all the races involved in this

ranking, points can be achieved for the result after the finals (see points table section 3.3.6) and 50 % of those points for the result after the qualifications. Both results will be added together for the racing. During qualification A and B licensed drivers must be separated in different heats.

- d) European Championship 1:8 track 40+/235mm 1:10th (open)

EC 40+: Open to all drivers of 40 years, including those who become 40 that year and older.

EC 1:10th 235mm (this last Class will be open to drivers between "10 and 70")

The allocated dates of the A-drivers EC and that of the B-drivers Championship may be exchanged by simple majority vote at the AGM in the years that a World Championship is being held.

Allocations and reallocations procedure will be fixed at the AGM's section meeting.

The format of EFRA GP's could be the same as for EC's but may be shortened up depending on the number of entrants.

- 2.2. Free practice for E.C. is only allowed from Monday preceding the Race. It will not be allowed to practice for participant's 10 days before this Monday (see also 8.1.). However pitlane refuelling may be forbidden during free practice at EC if it is necessary to facilitate a quicker turn-around of drivers (every five minutes).

- 2.3. Free practice for Grand Prix events must be allowed at least from Friday preceding the event (see 8.2.).

- 2.4. General Qualifying format for EC's and GP's: Minimum 4 and Maximum 6 series of 5 minutes heats depending on the number of drivers.

If there are 60 drivers or less, 6 rounds.

If there are >60- <80 drivers, 5 rounds.

If there are more than 80 drivers, 4 rounds

With everybody qualifying for Christmas tree sub finals and 1-4 qualifying directly for the final. Depending on time available at Saturday all finals higher than 1/64th will be shorter than 20 minutes (for instance 10 minutes). See also 2.6

- 2.5. Time Schedule

The time schedule should not be rigid but adapted to the number of entrants. As a guideline at EC's with 120 or more entrants the schedule should be as follows;

Monday - Thursday free or controlled practice.

Thursday and Friday Technical inspection.

Friday controlled practice and 1st series of qualifying in the afternoon.

Saturday round 2 till 4. Lower finals till 1/64.

Sunday 1/32 finals upwards, practice main final direct qualifiers, minimum 10 minutes, maximum 20 minutes between 1/8 and 1/4 final. Final.

The race director should configure the heats based on the EFRA ranking of the previous year. The heats shall contain a maximum of 10 drivers. These practice heats will be of 10 minutes of duration. The schedule of all practice heats including each practice heat starting time will be carried out by the organisation of the event and it should be given to the Team Managers & published for general knowledge.

- 2.6. General sub-final and final formats for EC' and GP: The sub-finals are 20 minutes up till 1/64th finals. Time for all finals higher than 1/64 to be set at team

managers meeting. The duration of the final is 45 minutes, the best 3 of each sub-final move up to the next final.

Following the semi-finals the best 2 of each semi-final move up to the final, plus the best 2 remaining drivers from the 2 semi-finals combined.

When racing conditions are wet in the 2 semi-finals, the best 3 of each semifinal move up to the final.

After the first semi final the first 5 cars will be put in Parc Ferme in Technical inspection and they will be released after completion of the technical inspection of the 2nd semi-final. This will give all drivers that proceed to the main final equal time for preparation.

In case of wet conditions, the above mentioned first 5 cars of the first semi-final, may be cleaned with compressed air before they are put in Parc Ferme in Technical Inspection. Cleaning of cars should take place under control of the Technical Inspection Staff.

Starting order for the drivers who moved up to the final is based on number of laps and time.

In different circumstances it will be number 1 from the A-final who gets the number 5 and the number 1 from the B-final who gets the number 6 etc. Sub-Final "even" is the first final to start on the Saturday afternoon.

2.7 Frequencies for semi-finals and finals are not published and must remain secret. The Race Director will allocate frequencies to the drivers personally after they have proposed to him 2 or 3 different frequencies. A radio check must be made before the start of the final.

2.8 During qualifying heats only 1 mechanic is allowed in the pitlane. During subfinals and finals 2 mechanics are allowed.

2.9 Marshalls for EC's and GP's are not compulsory. During the Qualifying the drivers must marshal the heat following their own. The first heat will be marshalled by the drivers of the last heat. The organising club must provide Marshalls for the finals. They must be experienced and supplied with gloves and/or other protection. No other drivers or mechanics will be allowed as Marshalls. No other persons, except officials are allowed on the track whilst racing is in progress.

Failure to marshal or provide a competent substitute will result in the loss of the driver's best qualifying time if qualifying by fastest time is in operation. The loss of the best points score will be the result if qualifying is by the round by round system. A substitute marshal is only allowed if the driver is physically disabled and must be notified to the Race Director.

2.10 The organiser must provide a marshal for any unfilled position i.e. previous heat A ranking system will be made based on the GP results, 2 worst results can be taken out, to define a Pro-Open ranking. This is no official EC series, but will be called, Pro-Open "year".

3. TRACK SPECIFICATIONS

3.1. Track surface should be unsealed asphalt or coarse finish with any joints smoothed.

3.2. Minimum length must be 200 metres (advised 240-300 mtr.).

3.3. Minimum width of the track will be 4 mtr. between marking lines. The maximum width is 6.50 mtr.

The marking lines must be 8-10 cm wide and either white or yellow. They must be approximately 20 cm away from the edge of the racing surface.

- 3.4. Maximum distance from the middle of the drivers rostrum to the furthestmost point of the track must be 60 metres.
- 3.5. Vision: no obstacles may interrupt the vision from the drivers rostrum to any part of the track.
- 3.6. A broken line may be drawn in the middle of the straight to aid vision. No lines may be drawn in corners other than the marking line.
- 3.7. The refuelling and pit area should be clearly distinguishable from the main track and as close as possible to the drivers rostrum. Exit from and entrance to the main track is advised to be on a slow part of the track.
- 3.8. Track design must include both right and left hand turns and must have a straight of minimum length 45 metres.
- 3.9. Outside barriers must provide a positive means of stopping a car which misses a corner or runs out of control. The primary consideration for selection of the outside barriers shall be the protection of the spectators and not the cars.
- 3.10. Inside barriers must deter corner-cutting and prevent cars reaching other parts of the track. Inside barriers must be positioned and dimensioned to prevent cars from flying over the outside barrier into the public enclosures.
The barriers must be smooth. When cones or dots are used, they should not be higher than 5 cm.
- 3.11. Barriers must be a minimum of 20 cm. away from the marking lines on the track.
- 3.12. The inner and outer surrounds to the track must be of grass or other suitable materials such as concrete. The object of these surrounds is to slow down any car that leaves the racing surface. The car must be able to leave the infield or outfield on their own to minimise the need for Marshall's assistance.
- 3.13. Marshall posts must be positioned at 30 mtr. intervals around the track. They may not obstruct the vision of the drivers.
The posts must be numbered. When a post is located at a dangerous part of the track (i.e. the straight or a fast corner), this post must then provide protection for the Marshall (a wall, tires, a gate etc.).
- 3.14. A start/finish line must be painted across the track, preferably in front of the time keeping position.
The first start line box must be located more than 10 mtr. away from the following corner.
- 3.15. For Le Mans type of starts, 10 numbered boxes will be located on the edge of the track, at an angle of 20-45 degrees to the track, minimum 3 mtr. apart. The boxes must be 70-100 cm long and 30-40 cm wide..
- 3.16. Formula 1 Grid Start.
The grid will be painted on the track.
The invitations should specify that the Formula 1 start will be used.
The grid will be painted on the track, preferable on the straight
Two rows of numbered boxes will be located on the track with approx. 1.5 - 2 m space between each row. On one side number 1, 3, 5 etc on the other side 2, 4, 6 etc. No. 1 stands 2 m in front of No. 2, No. 2 stands 2 m in front of No 3 etc.
- 3.17. Race Directors must use the staggered starting system (see general rules 9.).
- 3.18. Race Directors and referees involved in EFRA sanctioned events may be invited to a briefing meeting covering interpretation of the rules and management of international races, so that they feel confident to manage a good race.

4. RACE PROCEDURES 1:8

(see also General Race Procedures Chapter 8). The arrangements of the heats and the numbering is left to the discretion of the organiser, with the faster drivers (A-license) running in the last heats.

The drivers must stand adjacent to their numbers on the rostrum, the mechanics must remain in their boxes along the pit lane.

For all finals, drivers with the lowest starting numbers may choose their position on the rostrum and the mechanics must stand under the driver where this is possible.

- 1 There must be a 3 min. gap between the end of one heat and the start of the next heat.

Also a minimum of 2 minutes must be allowed between the issuance of the transmitters and the start of the heat.

- 2 An audible warning will be given at 1 minute and again at 30 seconds prior to the official start, in English and other languages as appropriate.

- 3 From 30 seconds till 3 seconds the cars must be held at the starting boxes. If a car is not at the starting box at 3 seconds due to unforeseen problems the car may start from the pitlane after other cars have officially started. The race director and referees will monitor for the abuse of this facility.

- 4 For all finals, from 10 seconds until 3 seconds prior to the start a second by second count-down will be made in English.

- 5 In case of LeMans or Formula 1 Grid Starts at 5 seconds prior to the start, the Starter will lower the starting flag and at 3 seconds the flag will be fully down.

At this point, all cars must be released by the mechanics, who will all step back 1 meter.

The cars must remain in the boxes, no part of the car touching the starting line.

- 6 From 3 seconds the verbal count down stops and the actual start-signal will be given by the Starter after a period of between 0 and 5 seconds has elapsed.

If the grid is not to the satisfaction of the Starter, he may require a re-start, re-commencing the count down from 30 seconds.

- 7 The official start signal will be audible by means of a hooter, operated by the Starter.

This signal will also start the Timing Systems.

- 8 Early starts, (i.e. any part of the car touching the starting line) will be penalised with a "STOP and GO" penalty. The time for this "STOP and GO" has to be set at the team managers meeting before the actual race starts and will have a maximum of 10 seconds.

This penalty is issued by the Starting Official, Race Director or the Referee and must be announced immediately after the start. The penalty will be marked on the result-sheet.

- 9 Under no circumstances will the race be stopped due to a jump start.

- 10 The Starter may only interrupt the race and make a re-start in the event that he considers the starting procedure or the start was not carried out correctly.

- 11 Delayed start.

As long as the starter has not called 30 seconds (the trial lap, see 4.3 is part of the procedure after 30 seconds) the cars to the start line, any participant of the semi-finals and final may request a delay of 10 minutes to carry out

repairs on his car. This delay can be granted only once for each semi final and the final.

- the track is closed, if the delay is requested as a result of frequency or radio problems
- the track is open, if the delay is requested for mechanical repairs or problems.

Any driver asking for a delay will start from the end of the grid (11th position to be painted on the track) or from the pitlane in case he is not in time at the grid.

4.2. STARTING PROCEDURE OF HEATS

Starting for qualifying heats will be from the start line using staggered start - one by one in the following order:-

Round 1 1,2,3,4,5,6,7,8,9,10

Round 2 4,5,6,7,8,9,10,1,2,3

Round 3 7,8,9,10,1,2,3,4,5,6

Round 4 10,9,8,7,6,5,4,3,2,1

Round 5 5,4,3,2,1,10,9,8,7,6

Round 6 8,7,6,5,4,3,2,1,10,9

4.3. Starting for Sub Finals and Final will be on a "Le Mans" type grid or a Formula 1 grid depending on the track layout, with the faster Qualifier starting in front of the slower. During sub finals and final, a trial lap is driven to avoid frequency problems and to check the transponders. Cars will be released one by one by the starter.

- #### 4.4.
- 1 All Qualifying runs and finals are ran by "time plus next-lap" system. Qualifying heats are 5 minutes duration, lower finals and semi-finals 20 minutes and final 45 minutes.
 - 2 When the time is over, an audible signal is given. A car finishes when it passes the finish line after the finish-signal is given. The car must immediately return to the pits and may not hinder other cars still racing.
 - 3 In case of doubt (on the finish-line when time is over), a car may race one more lap and finish. Whether he finishes or not when time was completed, is up to the Time-keepers and cannot be disputed.
 - 4 After returning to the pits, the engine must be stopped immediately and the transmitter turned off and impounded.

4.5. Qualification Order and Finals.

- 1 After all series have been completed the Qualification order is established, by taking the best result of each driver.
- 2 In case of more than one driver recording identical best results of qualifications the next best result is taken
- 3 In the case of more than one driver recording identical results in a final, the driver starting with the higher start number is classified as the faster, e.g. if number 5 and 2 have equal times, 5 is deemed to have higher final placing.
- 4 The sub-finals and final are run according to the schedule printed in the official race program, which may only be changed by team managers majority vote.
- 5 After all sub-finals and final are completed a final result list is prepared based on laps and time, bearing in mind the sub final order. In case of rain see 4.6.

4.6. RAIN SITUATION

In case of different weather conditions during subfinals the final classification will be as follows: Place 4 of subfinal A and Place 4 of subfinal B will both be awarded place 11th equal in the general classification.

Place 5 of subfinal A and place 5 of subfinal B will both be awarded place 13th equal in the general classification and so on.

4.7. RACE INTERRUPTIONS

-1 In the case of a race which is interrupted for more than 60 minutes for reasons beyond the control of the organisers (bad weather conditions with safety risks for all persons at the meeting), the referees together with the Race-director will decide whether to cancel or continue the meeting.

-2 In the case of an interruption of a heat the entire heat will be re-run.

-3 In the case of an interruption of sub-final or a final the following procedure will be used:

A. If less than 10 minutes of a final has been run, the results will be cancelled and a new start given for the total time of the final. Vehicles may be repaired before the new start.

B. If more than 10 minutes of the final have been run, the results at the moment of the interruption will be kept. The new start will be given for the time which remains to complete the final.

The two results will be added to give the final and definitive placing. If the second start cannot be made for any reason, the results from the first part will be used as the final and definitive placing.

C. When the interruption takes place after 75% or more of the race is past, the results as at the time of the interruption becomes the final result.

At the moment of the interruption of the race, the drivers will leave their vehicles on the start-line under the control of the Race Director. They may switch off the radio and stop the engine. There will be no repairs carried out to the vehicle or changing of tyres. Any driver who does not observe this rule will be immediately disqualified.

4.8. RAIN PROCEDURE DURING QUALIFYING

-1 The Race Director and the Referees are jointly responsible for the decision to stop a race in the event of rain.

-2 On the result sheets the Race Director or the appointed official must mark a heat "WET" when the heat was raced under wet conditions. On the corresponding record sheets, this must also be marked.

The Race Director together with the Referees will decide in case of doubt. Heats are generally considered to be 'WET' when there is any rain or moisture on the track and it is obvious to the race director that the cars cannot perform to their maximum capability. The race director may decide to postpone qualifying if it is likely that qualifying can be resumed within reasonable time.

-3 When all drivers have had at least one dry heat, all results will be counted.

-4 When weather and time permits, the Race Director may decide to offer an extra heat to those drivers who did not have a chance to drive a heat dry (i.e. when most drivers had 2 resp. 3 dry runs, a 2nd. resp. 3rd. run may be offered to those who had only 1 resp. 2 dry runs).

-5 When not all drivers have had a chance to run a dry heat, only the wet results will be counted.

- 6 When continuation is judged to be senseless, or when other drivers should be offered a fair chance to drive under dry conditions, the Race Director together with the Referees may decide to end a heat or cancel a complete heat (4.8.1.)
- 7 When all drivers have had at least 1 dry heat, the race-director will postpone the qualifying until the track is declared fully dry again. If it is likely that this will interrupt the qualifying for more than 1 hour, the race director may decide to open up the track for controlled practice

5. TECHNICAL SPECIFICATIONS

All measurements referred in this appendix are minimum or maximum values. All measurements for the motor dimensions to be considered with 2 digits behind the comma, all other measurements to be considered 1 digit behind the comma.

Measurements must be within their maximum or minimum values under all Circumstances.

- 5.1. The engine may have a total capacity of not more than 3.50 ccm.
A maximum carburettor diameter of 9.00 mm.
- 5.2. The fuel tank including filter and fuel pipes up to the carburettor may hold a maximum of 125.00 ml. No loose inserts allowed.
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 approx. 15 minutes. This period of 15 minutes is only necessary in case the temperatures are above 20° C.
- 5.3. Overall dimensions:
 - Wheel base: 270.00-330.00 mm
 - Overall width max.: 267.00 mm
 - The maximum width of the body-shell is 267mm on top of the wing and stiffeners in the side of the body are not allowed.
- 5.4. TYRES:
 - Maximum width rear: 64.00 mm
 - Tyres must be black except for writing on the side-walls.
- 5.5. RIMS
 - The rim must not exceed 54.00mm + 1.00 mm tolerance diameter. An edge to reinforce the rim on the inside (carside) of 2.00 mm thickness and 3.00 mm height is allowed, flange diameter max. 60.00 mm. Any fixing bolts or other equipment installed in the wheel rims may not extend beyond the exterior of the wheel rim.
- 5.6. All vehicles must be equipped with brakes and a clutch in such a manner, that the vehicle may be held stationary with the engine running.
- 5.7. Each motor must be equipped with an exhaust system and an inlet silencer, to reduce the amount of noise generated by the car. Each individual car must not produce more than 82 dB, measured at 10 meters distance and 1 meter high. 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.
- 5.8. The front of the vehicle must be equipped with a bumper in such a manner, that it will minimise a injury in the case of it enters into contact with other participants or members of the public.

The bumper must be made from a flexible material with all corners and sharp edges rounded off.

The contour of the bumper will follow the contour of the body with which it is being used.

At no point may the bumper protrude more than 5.00 mm in front and 13.00 mm on the sides of the body.

5.9. If a rear bumper is fitted it must finish not more than 50.00 mm behind the rear axle.

5.10. The aerial must be made from a flexible material.

5.11. Bodies must be a 1:8 scale in character reproduction of vehicles that exist or have existed in the last five years. There will be an allowance of 10% tolerance in all dimensions.

5.12. All EFRA sanctioned events will be raced with open/closed cockpit prototypes/ sportscars/ canam type/GT-P's/Group-C or similar cars.

All lists of approved equipment, (ie. Bodies, mufflers and batteries) must be available on EFRAs webpage from the 1st of March every year. This is the finale lists for this year and no changes will be made before the next year. Equipment homologated during the year will not be put on the list until 1st of March next year.

5.13. The body must be made from a flexible material and be painted properly. When initially entered in a meeting the body must be neatly finished.

5.14. A realistic driver (minimum 3 colors) made to 1:8 scale must be fixed in the correct position in an open cock-pit cars. The windscreen and windows must be translucent (ie. Not completely painted in)

5.15. All bodies must have the front and rear wheel arches cut out if the original was so designed.

5.16. CUT OUTS

- the windscreen must not be cut out. One hole of max. 6.00 sq. cm for cooling is permitted

- side windows and rear windscreen may be removed

It is not allowed to bend windows to the outside

- all parts of the vehicle must be covered, except:

- a) cooling head of engine

- b) air filter

- c) aerial (max. 10.00 mm)

- d) outlet pipe of muffler

- e) fuel filler cap

- f) roll-over bar

Only if these parts are extending the body. Cut outs for above mentioned parts are to have no more than 10.00 mm clearance.

In addition to this, the following holes are allowed:

- g) for muffler outlet

- h) for fuel filler cap (50.00 mm maximum, round, viewed from above and not combined with the hole from the roll-over bar, or oval 40 mm x 60 mm maximum and not combined with the hole for the roll-over bar) Note: Hole for roll-over bar and fuel filler gap may not be combined. This rules refers to the GT-P/Group-C body.

In case of the Proto types or open cockpit cars a clearance of 10 mm around the fuel filler cap is allowed.

- i) for radio switch (max. 10.00 mm)

- j) for glow plug (max. 20.00 mm)
- k) fuel mixture valve (max 15.00 mm)

5.17. Specific body attributes

- a) Group C: Cars eligible for this class are those that have been used under "Group C" rules in the FISA Sportscar World Championship.
- b) GT1/GT2-Cars: Cars eligible for this class are those that are or have been racing in FIA GT Class. This can be either GT1 or GT2 cars like McLaren F1, Porsche 968 GT1, Ferrari F40, Marcos etc.

The cut-out of the body at the rear is free after the rear axle, but rear lights must be fitted if the original is equipped with these.

- c) GT-P cars, eligible for this class are those that are or have been racing in the FIA "GT-P" class (see Le Mans 1999), or the Petit Lemans Series in America.
- d) Proto type CAN-AM cars, eligible for this class are those that are of have been racing in any official championship.

Homologation procedure; For all types of cars, the body shape behind the rear axle is not subject to control.

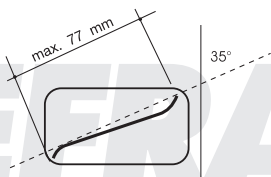
The outer edge of the wheels must be covered at the centre of the axles viewed from the top. All bodies must be homologated by EFRA.

5.18. Wings and Spoilers

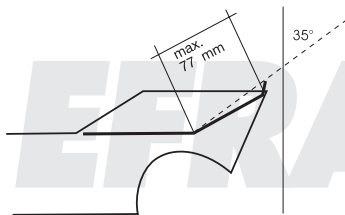
Whether build into the body or separate, they must have an angle of minimum 35 degrees measured on the vertical line inclusive of any added aerodynamic aids. If separate, they must have a chord of no more than 77 mm. Any added aerodynamic aids must have a chord of no more than 77 mm. All measurements for the wing height will be taken with the chassis grounded with a 10 mm spacer.

The angle is to be measured with a specific tool as follows:

separately mounted:



directly added:



The angle is to be measured over a distance of 77 mm from the highest point of the spoiler or Guernsey flap to the middle of the body.

You need a tool from which you can adjust the height and the angle.

The angle must be a minimum of 35° or bigger.

Maximum dimensions:

- 1) Group "C", GT-P cars

max. width:	267.00 mm
max. height:	160.00 mm (inc added parts)
max. chord:	77.00 mm
max distance behind rear axle:	153.00 mm

A single plane rear wing/aerodynamic aid need not be homologated. Any front

wing or multi plane rear wing must have an EFRA homologation number moulded into the shell. It may only be used with the shell of the same number.

2) GT1/GT2-Cars

max. width: 267.00 mm

max. height: 150.00 mm

max. chord: 77.00 mm

max distance behind rear axle: 153.00 mm

Single plane wings are only eligible for this class, they do not need to be homologated

3) Proto type Can Am Cars

max. width: 267.00 mm

max. height: 170.00 mm (inc added parts)

max. chord: 77.00 mm

max distance behind rear axle: 153.00 mm

5.19. Checks at the technical inspection

a) Before the race all cars will be checked and during the heats the following random checks will be made:

- weight limit
- muffler
- body and spoiler

The chassis is to be indelibly marked before the race and if a driver wants to change it, he must present the new and the old to the inspection officer.

b) During sub finals all cars moving up to the next final plus the next one are to be checked. In addition to the above mentioned checks the following are to be done during sub-finals:

- marking of chassis
- fuel tank capacity

c) The same checks must be made after the final for the top 4 places.

5.20. Fuel will only contain methanol, Oil/lubricant and nitro methane. The specific gravity of the mixture may not be more than 0.91. Based on normal oil percentages this will give a maximum of 25 % nitro measured by volume. Verifying will be done with a floater, called Nitromax 25.

5.21. 4WD cars can be used without any technical restrictions except those listed in Section 5. The use of separate front wheel brakes, except through transmission is also not allowed (locking of one-way bearing is allowed).

2WD cars are restricted to:

- Rear axle driven
- Gearbox with maximum 2 gears
- No front wheel brakes
- No gas filled shock absorbers.

Specifications of flat chassis cars:

- rear wheel propulsion only
- one engine (one cylinder, 3.50 ccm air cooled)
- brake on rear axle only
- no gear box
- no suspension, an articulated front end is allowed

5.22. The minimum weight limit of the cars:

2500 grams for 4 WD cars, 2400 grams for 2 WD cars.

The weight limit will be checked with the cars ready to race but with empty fuel tanks and with transponder. (personal or with battery)

The weight will be checked on a digital scale balance and can be done before the start of the heat, sub-final, final or after the end of either.

If the weight is found to be under the minimum weight the driver should be disqualified from the heat, subfinal or final.

- 5.23. The car shall be measured for width by placing it on a baseboard equipped with two side rails of 20 mm height spaced 267 mm apart, constructed in such a way, that the car can roll freely between them.

Base-board and rails must be constructed of high quality board suitably stiffened to prevent distortion. The car must roll freely between the side rails with any steer able wheel set in the straight ahead position without any part of the wheels, bumpers, body shell or any other part of the car touching the side rails irrespective of the compression or extension of the suspension.

The car shall be measured for length and height in a similar constructed bow of internal dimensions 637 x 267 mm for Formula and Sports cars and 610 x 267 mm for GT cars which includes provision for checking the maximum height.

Measurement of the wheel base may be made by simple measurement of axle centre distance, but Race Directors should be prepared to make more exact checks in case of doubt or protests. It is suggested that the wheels are removed and the wheel spindles firmly placed on V-blocks whilst accurate measurements are made.

It is the responsibility of the driver to ensure that his car complies with the regulation at all times, that it is on the track and the organiser may check any car for compliance with the regulations at any time during the race meeting.

If a car is found to exceed the limits of dimensions on checking immediately after a race, positive proof of race damage may prevent disqualification.

- 5.24. A roll bar may be fitted which must not project more than 30 mm above the cooling fins or roof, in case of, for instance a saloon car.

- 5.25. It is not allowed to use any electronic parts for "Traction Control and braking control (ABS)" which can control the power of the transmission by means of a feedback system.

It is not allowed to use any form of telemetry with active transmission.

- 5.26. All lists of approved equipment, (ie. Bodies, mufflers and batteries) must be available on EFRA's webpage from the 1st of March every year. This is the finale lists for this year and no changes will be made before the next year. Equipment homologized during the year will not be put on the list until 1st of March next year.

6. A & B LICENCE

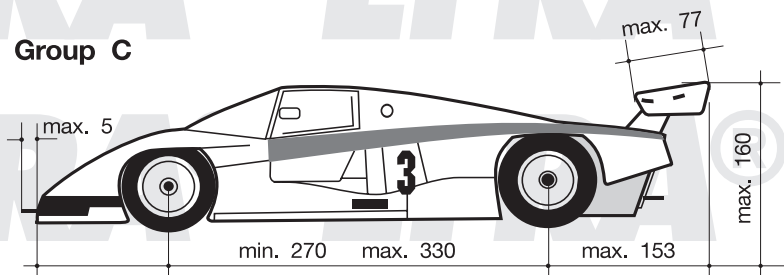
- 6.1. To qualify for an "A" licence, a driver must be placed 1-30 in the EFRA ranking system. All other applicants will be classified EFRA "B" licensed. These drivers must be approved by their own National Association as having sufficient experience and skill to take part in an International competition. World Champion will retain "A" licence for the next 5 years. European Champion will retain "A" licence for the next 4 years. European Champion B-drivers will retain "A" licence for the next 3 years.

7. PENALTIES

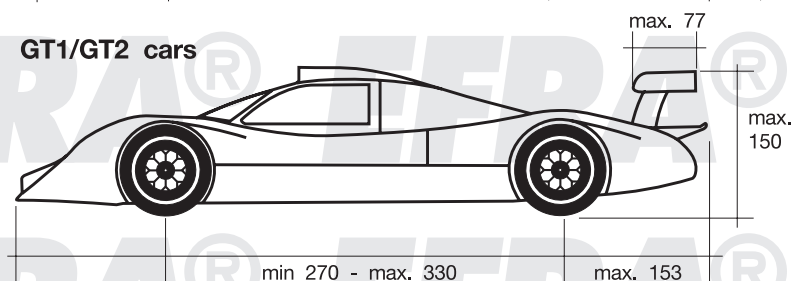
- 7.1. Referees must issue a verbal blue flag warning to slower drivers or to make drivers that are not within the same lap as the car that is about to pass him, to make way and not to obstruct the passing car. This warning must be announced "ATTENTION DRIVER (Name)"

- 7.2. Failure to respond to the verbal blue flag will result in an official warning and the driver must make a mandatory pit stop for 10 seconds. During this mandatory stop the Referee will administer the official warning directly to the driver. In the case that there is no possibility to call a driver for a stop and go penalty, the Referee and or Race Director will announce a time penalty of 10 seconds.
- 7.3. Any driver who is given 2 (two) official warnings will be immediately disqualified from the race in progress. After 3 (three) warnings the driver will be disqualified from the entire race.
- 7.4. Deliberate waiting for other cars will be treated as a verbal blue flag offence and a "Stop - Go" penalty issued. The Referee will advise the driver that his behaviour has been noted and that he should race normally. Failure to follow the Referees instructions will result in immediate disqualification. In the case that there is no possibility to call a driver for a stop and go penalty, the Referee and or Race Director will announce a time penalty of 10 seconds.
- 7.5. Deliberate obstruction of other cars in an attempt to influence the result of a race will lead to immediate disqualification and loss of his/her International Licence until after the next event of the same kind. (e.g. GP/EC/WC)

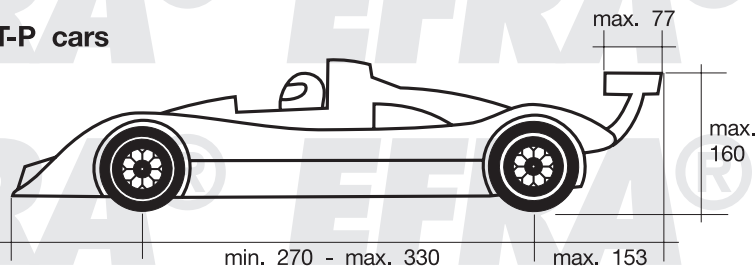
Group C



GT1/GT2 cars



GT-P cars



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. Accommodations for at least 130 drivers must be available. If the number of entries exceed 130, the accommodation must be sufficient for all participants.
- 1.2. For allocation and re-allocation procedure see 3.6. and 6.2.
- 1.3. If a driver has not registered by midday on the first day of the event, then this place will re-allocated unless that driver has contacted the organiser to explain his reason for not registering
- 1.4. A 4WD European Championship for B Class drivers may be organised 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. To be run if possible the 2nd weekend of June.

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 and reseeding of the heats will only be done in case of clear necessity on the criteria of the R.D. and Referee.

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: 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 1, 2, 3

Round 3: 7, 8, 9, 10, 11, 12, 13, 14, 15, 1, 2, 3, 4, 5, 6

Round 4: 10, 11, 12, 13, 14, 15, 1, 2, 3, 4, 5, 6, 7, 8, 9

Round 5: 13, 14, 15, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

- f) Track repairs can only be carried out after qualifications and before the first Final unless it is for safety reasons with the agreement of the referee's.

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. Results of the times practice will be published (laps and times). Points will be awarded according to the

result 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 place 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 place 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 then driver with fastest laps and times will determine position.

Out of 5 completed rounds 3 to count

Out of 3 and 4 completed rounds 2 to count

Out of 1 and 2 completed rounds 1 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.

"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 Semi-final A and B 20 minutes, the final should be 45 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.

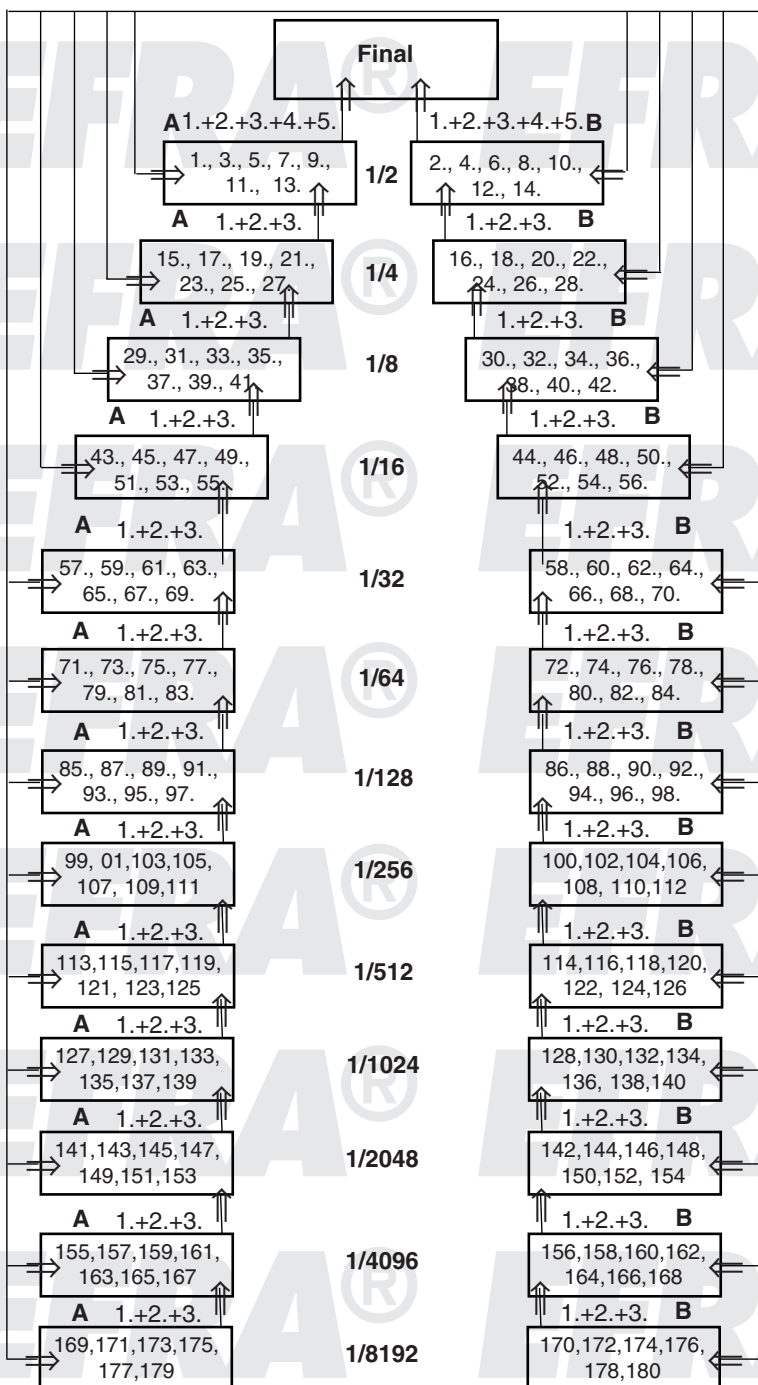
After the finish of the quarter finals each semi finalist ("A" and "B") is entitled to 10 minutes practice time with numbers and appropriate radio frequencies (See attached Christmas tree). If the first subfinal is 1/1024 or less then all subfinals will be 20 minutes duration.

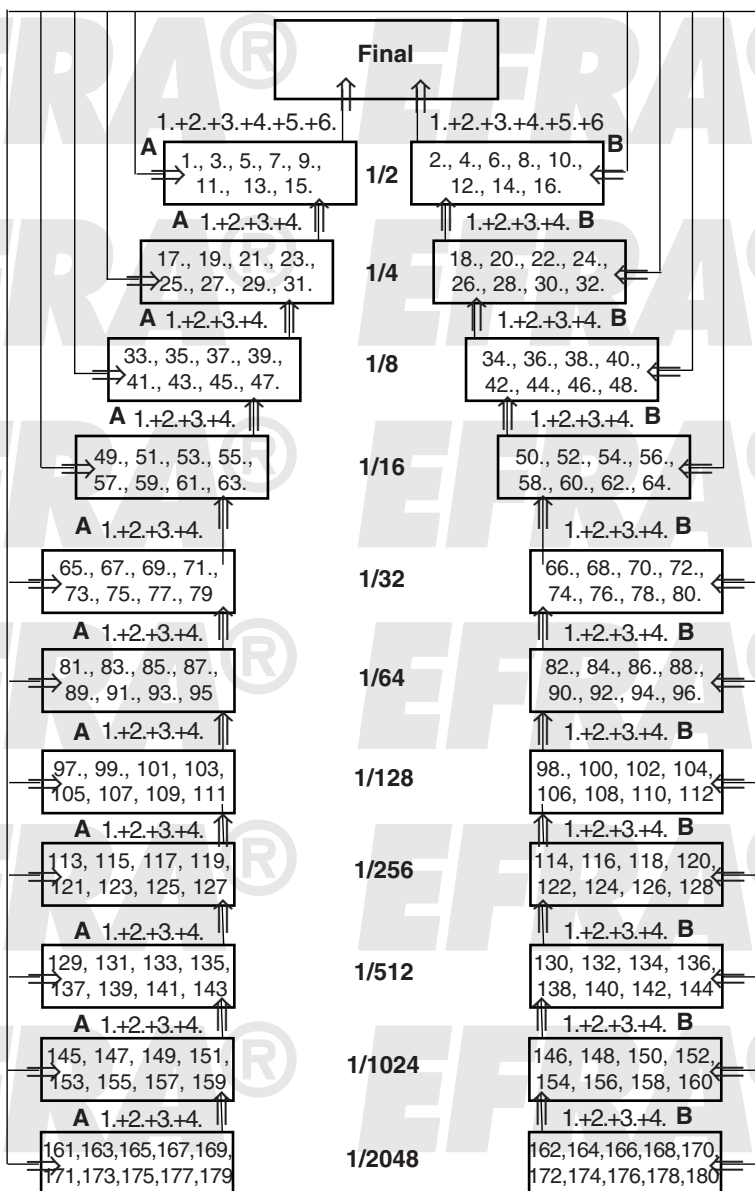
There will be a final for +40 drivers after the 2 semi finals and before the main final, length of that final will be 20 minutes. Drivers will qualify for that final according to their result achieved at qualification rounds, top 10/12 will have the right to compete at this final except those who have reached the semi finals.

2.6. TIMETABLE

The timetable for E.C. shall be as follows:

TUESDAY	A.M.	Registration & Technical Inspection
	P.M.	1 round Timed Practice (15 minutes)
WEDNESDAY	A.M.	2 rounds Timed Practice (10 minutes)
	P.M.	Reseeding of drivers from practice times.





Top 50/60 in 1st 5 heats
 51/61 - 100/120 in next 5 heats
 101/121 - 140/180 in next 4/5 heats
 1 round of timed practice 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 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.

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.

4. RACE PROCEDURES

Race procedures shall be as for sections 2 & 3 & 4 - 1:8 scale racing cars (Appendix 1) adapted to the special characteristics of the off-road section.

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

4.1

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 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 75 and 120 mm.

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 carburetor.
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 carburator 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 All cars must be equipped with mufflers, approved (homologated) by EFRA.
- 5.3.2 Each individual car must not produce more than 83 dB (A) measured at 10 meters distance.
- 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

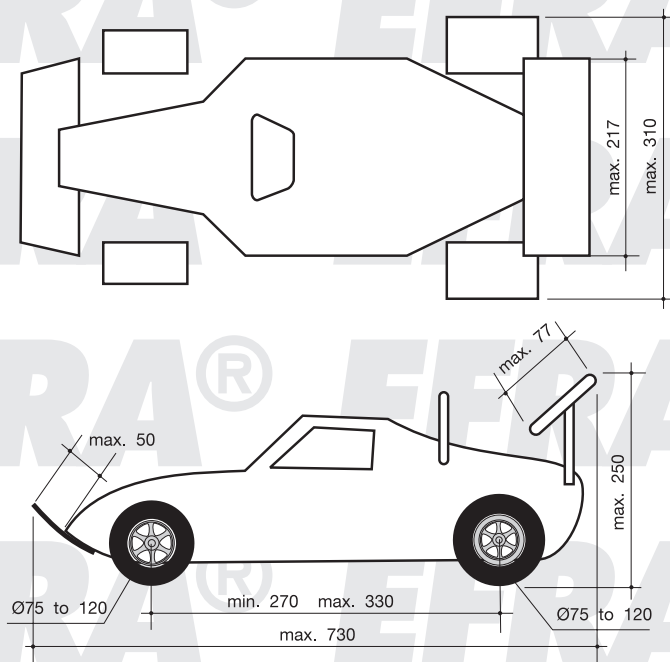
All tyres must be black with the exception of side wall lettering, and the application of any additives is strictly forbidden.
No spikes, tubes or additional items intended to increase traction may be either glued to the outside of tyres or passed through tyres from the inside.

5.5. WINGS

A wing of maximum overall size 217 mm. length and 77 mm width may be fitted.

5.6. APPEARANCE

- a) Cars shall be a reasonable representation of the style of car used for offroad, desert or trial racing.
- b) Full bodysells 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 bodysells 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 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 of 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 16 classification and over 40 final.
- Trophy for positions 4-20 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.

APPENDIX 5

LARGE SCALE I.C. TRACK RULES

1. RACE FORMAT

- 1.1 There will be two annual events called European Championships to determine the European Champion in:
- a.) 1:4 Scale GT/ Saloon, Formula 1
 - b.) 1:5 Scale Touring Cars
- The EC 1:4 Formula 1 and the EC 1:5 Touring cars can be combined during two consecutive weekends at the same venue.
- Formula 1 Large Scale Euro Championship series. consist 6 Grand Prix races. According to EFRA GP races. The best 3 results taking account. Points shall be given as follows - GP 2 75, 71,
- 1.2 The results of the EFRA-GP's combined with that of the European Championship, will give the EFRA ranking list.
- The Ranking list will be a continually updated one, for every new EFRA GP or EC/WC added, the oldest one will be deleted.
- 1.3 The number of drivers in one race meeting is limited to 120. The number can only be raised up under certain circumstances by the section meeting during the AGM.
- 1.4 Qualification for the European championships and World championships 1:5th Touring Cars:
- 20 places for the European championships and 7 places for the World Championships for the following year's meeting/s to be offered to the highest ranked drivers competing in the large scale efra gp series. The remainder to be split as per normal between countries as outlined in general rule 3.6.
- Only the EFRA GP meetings to count for the points system, with the drivers best 4 meetings out of the 6 to count (or 50% plus 1 counting, e.g., 5 out of 8 meetings).
- Points system to use: 1 = 50, 2 = 47, 3 = 45, 4 = 44, 5 = 43, ... 10 = 38, 11 = 35, 12 = 34 ... TQ = 1 extra point

2. RACE PROCEDURE

- 2.1. Duration of the races:
- | | |
|--------------------|---|
| Free practice max. | 8 minutes |
| Heats | 10 minutes (plus the last lap and time of the last lap) |
| Sub-finals min. | 15 minutes, max. 20 minutes up from the 1/32 final (plus the last lap and time of the Last lap) |
| Final Saloon | 30 minutes (plus the last lap and time of the last lap) |
| Final Formula 1 | 45 minutes (plus the last lap and time of the last lap) |
- SPECIAL REGULATIONS F1
- 3 rounds of timed practice
- Qualification heats:
- 6 heats 10 minutes (plus the last lap and time of the last lap) Rolling starts
- Half finals 30 minutes.
- 2.2.
- a) The EFRA Christmas Tree will be used.
 - b) All other drivers are allowed to race a sub-final.
 - c) Sub-Finals: The first 3 drivers from each sub-final progress up to the next final.
- Semi-final: The first 4 drivers from each semi- final progress up to the final

together with the next 2 drivers with the best times from the 2 semi-finals combined.

- d) In the event of different weather conditions during the semi-finals the first five from each semi-final will move up to the final.
- e) It is not allowed to drive a model car on any other place than the track and the marked track pit lane.

2.3a Number of drivers:

Heat: 10 to 15 drivers (only 1:5), track and facilities permitting.

Sub-finals and finals: Maximum 10 drivers

Final F1 EC Maximum 10 drivers

Final F1 EFRA GP's: Maximum 15 drivers, if the team managers agree

The race format will be notified in the event information and invitation material.

2.3b In the event that the transponder loop is before the exit to pit lane any car than should start from pit lane will start from position 11 on the grid.

2.4 TIME SCHEDULE for EC

EC Tracks must be closed for Large Scale Racing, two weeks prior of the event. No cars are allowed on the track before Tuesday morning.

(Tuesday and Wednesday only for 1:5)

General qualification format for EC's: Minimum 4 and Maximum 6 series of 10 minutes heats depending on the number of drivers.

If there are 60 drivers or less, 6 rounds.

If there are >60 - <80 drivers, 5 rounds.

If there are more than 80 drivers, 4 rounds.

Monday all day track closed

Tuesday 09:00-18:00 Free practice (ticket system)

Wednesday 09:00-18:00 Free practice (ticket system)

Thursday 09:00-18:00 Timed practice /tech inspection/heats

Friday qualification heats

Saturday qualification heats, lower finals

Sunday 09:00 - 17:00 sub-finals and final.

TIME SCHEDULE FOR COMBINED EC

The combined EC will start on Saturday with F1 and carry on with the touring cars following on Tuesday. TC will end on Sunday.

2.5 STARTS

(see also General Race Procedures Chapter 8).

The arrangements of the heats and the numbering must be done using the EFRA ranking list according to the general rule 3.3.6. (The season is the last 365 days before the event). The drivers must stand adjacent to their numbers on the rostrum, the mechanics must remain in their boxes along the pit lane. For all finals, drivers with the lowest starting numbers may choose their position on the rostrum and the mechanics must stand under the driver where this is possible.

- 1 There must be a 3 min. gap between the end of one heat and the start of the next heat. Also a minimum of 2 minutes must be allowed between the issuance of the transmitters and the start of the heat.
- 2 An audible warning will be given at 1 minute and again at 30 seconds prior to the official start, in English and other languages as appropriate.
- 3 From 30 seconds till 3 seconds the cars must be hold at the startingboxes. If a car is not at the starting box at 30 seconds due to unforeseen problems the car may start from the pitlane after other cars have officially started. The

race director and referees will monitor for the abuse of this facility.

- 4 From 10 seconds until 3 seconds prior to the start a second by second count-down will be made in English.
- 5 During Formula 1 Grid Starts at 5 seconds prior to the start, the Starter will lower the starting flag and at 3 seconds the flag will be fully down. The cars must remain in the boxes, no part of the car touching the starting line. For sub-finals and final the "Formula 1" grid start must be used.
The starting order for the qualifying heats will be predetermined by the best results during the organised, timed practice. When using the "Formula 1" grid start procedure, a one lap trial start must be made (to check all transponders). Following this trial lap, the start will be within 5 seconds after the last car is stationary on his correct grid position. No mechanics are allowed on the track. Any car missing from the starting grid, must start from out of the pits lane after the last car on the grid has passed.
- 6 From 3 seconds the verbal count down stops and the actual start-signal will be given by the Starter after a period of between 0 and 5 seconds has elapsed. If the grid is not to the satisfaction of the Starter, he may require a re-start, re-commencing the count down from 30 seconds.
- 7 The official start signal will be audible by means of a hooter, operated by the Starter. This signal will also start the Timing Systems.
- 8 Early starts (i.e. any part of the car touching the starting line), will be penalised. (10 sec. up to 1lap) This penalty is issued by the Starting Official or the Time-keeping official and must be announced immediately after the start. The penalty will be marked on the resultsheet.
- 9 Under no circumstances will the race be stopped due to a jump start.
- 10 The Starter may only interrupt the race and make a re-start in the event that he considers the starting procedure or the start was not carried out correctly.
- 11 Delayed start. As long as the starter has not called the cars to the start line, any participant of the semi-finals and final may request a delay of 10 minutes to carry out repairs on his car. This delay can be granted only once for each semi final and final. - the track is closed, if the delay is requested as a result of frequency or radio problems - the track is open, if the delay is requested for mechanical repairs or problems. If a driver is asking for a delay on frequency problems, the mechanics are only allowed to turn off engine and receiver. They are not allowed to make any repairs including change of tyres.
- 12 When the starter calls the main final to the start line, the mechanics are not allowed to refuel the cars.
- 13 The driver asking for the delay for what ever reason, except an error in frequencies of the race control, must start from the pit lane.

2.5.1 STARTING PROCEDURE OF HEATS

For qualifying heats no stop between practice time (warming up) and start of the heat. Just start the clock when practice time is over. (Flying start.)

- 1 If the number of heats differ from 10, or if the event is planned with more/less rounds, a sequence following this general scheme has to be used.
Round 1: 1,2,3,4,5,6,7,8,9,10
Round 2: 4,5,6,7,8,9,10,1,2,3
Round 3: 7,8,9,10,1,2,3,4,5,6
Round 4: 10,9,8,7,6,5,4,3,2,1

Starting for Sub Finals and Final will be on a Formula 1 grid depending on the track layout, with the faster Qualifier starting in front of the slower.

- 2.5.2.
- 1 When the time is over, an audible signal is given. A car finishes when it passes the finish line after the finish-signal is given. The car must immediately return to the pits and may not hinder other cars still racing.
 - 2 In case of doubt (on the finish-line when time is over), a car may race one more lap and finish. Whether he finishes or not when time was completed, is up to the Time-keepers and cannot be disputed.
 - 3 After returning to the pits, the engine must be stopped immediately and the transmitter turned off and impounded.

2.5.3. Qualification Order and Finals.

- 1 After all series have been completed the Qualification order is established, by taking the best result of each driver.
 - 2 In case of more than one driver recording identical best results of qualifications the next best result is taken.
 - 3 In the case of more than one driver recording identical results in a final, the driver starting with the higher start number is classified as the faster, e.g. if number 5 and 2 have equal times, 5 is deemed to have higher final placing.
 - 4 The sub-finals and final are run according to the schedule printed in the official race program, which may only be changed by teammanagers majority vote.
 - 5 Starting order for the drivers who moved up to the final is based on number of laps and time.
In different circumstances it will be number 1 from the A-final who gets the number 1 and the number 1 from the B-final who gets the number 2 etc.
- 2.5.4 During the warm-up period, or at any other time of a race in progress, deliberate stopping a car on the race track will lead to be penalised with a 10 second "stop and go" after the start of the race. Consecutive stopping on the race track will lead to immediate disqualification.

2.6. RAIN SITUATION

In case of different weather conditions during subfinals the final classification will be as follows: Place 4 of subfinal A and Place 4 of subfinal B will both be awarded place 11th equal in the general classification. Place 5 of subfinal A and place 5 of subfinal B will both be awarded place 13th equal in the general classification and so on.

2.7. RACE INTERRUPTIONS

- 1 In the case of a race which is interrupted for more than 60 minutes for reasons beyond the control of the organisers, the jury will decide whether to cancel or continue the meeting.
- 2 In the case of an interruption of a heat the entire heat will be re-run.
- 3 In the case of an interruption of sub-final or a final the following procedure will be used:
 - A. If less than 10 minutes of a final has been run, the results will be cancelled and a new start given for the total time of the final. Vehicles may be repaired before the new start.
 - B. If more than 10 minutes of the final have been run, the results at the moment of the interruption will be kept. The new start will be given for the time which remains to complete the final. The two results will be added to give the final and definitive placing. If the second start cannot be made

for any reason, the results from the first part will be used as the final and definitive placing.

- C. When the interruption takes place after 75% or more of the race is past, the results as at the time of the interruption becomes the final result. At the moment of the interruption of the race, the drivers will leave their vehicles on the start-line under the control of the Race Director. They may switch off the radio and stop the engine. There will be no repairs carried out to the vehicle or changing of tyres. Any driver who does not observe this rule will be immediately disqualified.

2.8.1. RAIN PROCEDURE DURING QUALIFYING

- 1 The Race Director and the Referees are jointly responsible for the decision to stop a race in the event of rain.
- 2 On the result sheets the Race Director or the appointed official must mark a heat "WET" when the heat was raced under wet conditions. On the corresponding record sheets, this must also be marked. The Race Director together with the Referees will decide in case of doubt. Heats are generally considered to be "WET2" when average lap times are approximately 20% slower than before, due to rain or moisture on the track.
- 3 When all drivers have had at least one dry heat, all results will be counted.
- 4 When weather and time permits, the Race Director may decide to offer an extra heat to those drivers who did not have a chance to drive a heat dry (i.e. when most drivers had 2 resp. 3 dry runs, a 2nd. resp. 3rd. run may be offered to those who had only 1 resp. 2 dry runs).
- 5 When not all drivers have had a chance to run a dry heat, only the wet results will be counted.
- 6 When continuation is judged to be senseless, or when other drivers should be offered a fair chance to drive under dry conditions, the Race Director together with the Referees may decide to end a heat or cancel a complete heat (2.7.-1.)

2.9. ACCIDENTS/CRASHES

- a) A yellow flag situation will be announced, if an accident occurs. (This must be a yellow flashlight combined with an audible signal, that can be operated by the referees and the race-director) During the yellow period overtaking other cars is not allowed. Cars are required to slow down so that they can stop immediately.

Disregarding this rule will be penalised by deducting one lap from the result of the driver concerned in that particular heat, sub-final or final. An official warning has also to be issued. Racing will recommence at racing speed following display of a green flag or the official announcement "track is clear". Signals given by flags have to be visible for all drivers.

- b) Mechanics are allowed to enter the track to save the car of their driver. The mechanic may restart the engine (3x) beside the track, but not repair the car. The mechanic may not disturb the progress of other cars in the race. Mechanics or Spectators entering the track from outside the pit lane to save a car will produce a penalty for that particular car. (Penalties can be given as stop and go or one lap penalty. The referees will inform the Team Managers about the sort of penalties given.)

If served by a spectator then this car should remain stationary until touched by the mechanic to save a penalty given.

The duration of a stop and go penalty given must be always as long as decided by the Referees and announced during the Team Managers meeting prior to the race-meeting. It is not allowed for any of the race officials to change the time of the stop and go penalties during the race meeting.

Three stop and go penalties for one car during one race will lead to disqualification (black flag).

3. TRACKS

3.1.1 Tracks for Large Scale racing will be inspected by EFRA Officials with regard to safety provisions for drivers, mechanics, race officials and spectators. EFRA Officials have the authority to ask for improvements to be carried out before racing starts.

3.1.2 A monitor must be placed in the pit area or under the rostrum during all international races. (WC/EC/GP)

4. GENERAL TECHNICAL SPECIFICATIONS

4.1. ENGINE and FUEL

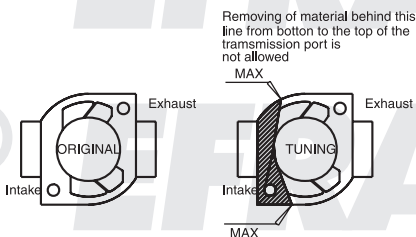
For QS: The engine must be a single cylinder, pull start, 2 or 4 stroke, maximum 26 cm³, magneto Ignition, Turbocharging or compressor are not allowed.

For Formula 1, Off Road and Fifth Scale Saloon:

1. Only one marked engine allowed. In case of rain situation, a second engine could be allowed during the time of wet track. The race director may decide an engine replacement of the same type or repair in case of failure. The replaced engine will be kept in race control till the end of the event. A driver asking for engine replacement will be placed at the end of the grid at his first final. Each driver is only allowed to use a maximum of 2 engines per event.
2. The engine to be a single cylinder, 2 or 4 stroke, maximum 23 cm³, maximum 26 cm³ for F1, QS and Off Road, pull starter.
3. No Turbo charging, Fuel injection, Supercharging, Wankel or rotary valve/distribution engines are allowed.
4. All ignition timing must be mechanically fixed, only manual static adjustment is allowed.
5. No Battery operated ignition allowed. Only a passive ignition system using R.P.M. as the single input parameter is allowed.
6. Only open deck admission ports are allowed.

The removal of material is free as long as the modified shape of the transfer/admission port walls are in the direction of the cylinder bore at all times.

7. The Cylinder block must be of a single casting. no independent liners or slipping liners are allowed.
8. The maximum numbers of admission ports is limited to 4.
9. Engine must be air cooled. The air being driven directly by the flywheel.
10. The crankshaft must be of split shaft configuration, with enclosed big end. No half crankshafts allowed.
11. An air filter must be fitted to the carburettor.



12. The maximum venturi diameter of the carburettor is limited to 13 mm.
13. Only fuel admitted will be petrol normally available at street petrol stations. The fuel must be bought at a fuel Station within the vicinity of the event. Details of the fuel station location and opening times should be provided by the race organiser prior to the event commencement, Fuel testing should begin prior to the start of qualification. Special fuel's like Avgas, race fuel etc. are strictly forbidden. The only additive allowed is mass production two stroke oil.

Technical inspection may ask for a sealed bottle of that oil, to check it. If a fuel is found suspect, the driver will be asked to mix his fuel at technical inspection, so it can be verified.

If an organiser is able to provide fuel at the track, all competitors have to use this fuel. The price of this fuel must not exceed the normal street price by more than 5%. Fuel tests may be made at random during the race. If a fuel is found illegal, the driver will be disqualified from the particular event, he may lose his EFRA licence for up to ten years. The fuel tester must be available to the competitors during the event.

If a driver wants to protest that decision, he has to make a written protest to EFRA with a deposit of 500.- EUR.

4.2. EXHAUST/NOISE REDUCTION

- 4.2.1 Maximum noise level is 81dB (A) measured at 10 metres, 1 metre above the track.

The race director has the authority to decide a different method of measuring (using the EFRA noise trap) as long, as the result will be the same.

If a car produces a noise level much in excess of the other cars, it is the Race Director's decision on whether this car is allowed to race.

Exhausts have to be of minimum three chamber type. No open exhausts or pipes are allowed.

The total exhaust have to be inside the body, with the exception of the tailend of the pipe, which may protrude the body not more than 10 mm.

The body may be cut out at that point max. 20 mm more than the tailend diameter.

Max. inside diameter tail end 13 mm.

- 4.2.2 All cars to be equipped with an air - box to reduce the intake noise of the carburettor and a second muffler (in case, that a two chamber exhaust is used) or a three chamber type muffler. All three chambers must be designed that way, that the exhaust fumes will pass it and then have to change direction twice to get the max. possible noise reduction

The design of that additional silencer is free, but with both systems together, the max. noise level must not be over 81 dB (A).

- 4.2.3 No refuelling allowed during racing for all cars in 1:5 Touring Cars.

Refueling is allowed only in Formula 1 and QS.

4.3. CAR

- a. The car has to have a functioning brake, which has to be capable of keeping the car stationary whilst the engine is running.
- b. A mechanical failsafe has to be fitted to the carburettor which returns the throttle to a closed position in case of breaking of the throttle linkage.
- c. Variable ratio transmission is not allowed.
- d. Only 2WD (rear-wheel drive) cars are allowed.
- e. No other function than steering and throttle/brake are allowed to operate

with radio control by the driver. Any other electronic or hydraulic systems are not allowed in the car, with the exception of electronic failsafe to stop the car in case of radio failure and the hydraulic brake system.

- f. The use of an electronic failsafe system is highly recommended.
- g. The ignition kill switch must be on his original place on the engine and the window on this side must be cut. The position must be marked with an E (size 20 mm) on the bodysell. To create more safety, it is allowed to have a second kill switch fixed near the rear window to allow easy access. This kill switch should be away from hot or moving parts.



4.4 TYRES

Tyres have to be black. The design of the tyre profile is free. It is not allowed to treat the tyres in the pit area. It is recommended that the chemical components of these products must be harmless for people and environment. Liability at the use of tyre additives lies at the user and manufacturer.

5. SPECIAL TECHNICAL SPECIFICATIONS

5.1 1:4 Scale

A 1:4 scale car must be to genuine 1:4 scale, and based on an existing 1:1 scale car.

5.1.1 GENERAL REQUIREMENTS:

The car must comply with the following dimensions:

Width (GT/Saloon) Maximum 530 mm

Height Maximum 400 mm

Tyre width - front maximum 90 mm

Tyre width - rear maximum 120 mm

Tyre width is the overall width of the tire at any time during the race. It is not the width of the rims.

Weight GT/Saloon: Minimum 12 kg

Fuel tank - capacity Maximum 1000 cm³ with the air cleaner, fuel pipe and without any removable pieces inside.

5.1.2 BODY

The car must have a Saloon or GT, derived from existing 1:1 Scale cars either used in motorsports, tuned up road versions or historic cars. It must be properly fixed to the chassis. Saloon and GT bodies must cover the top of the wheels at the centre of the axle when viewed from the top.

The bodies must be made 1:4 scale with a tolerance of 10% in all dimensions and must be carefully adapted from a 1:1 scale existing car. Open bodies (including Formula Cars) must carry a minimum of driver arms, shoulders and helmet (in scale) in the place where the driver normally is located. It is not allowed to cut out the windshield, but a maximum size hole of 6 sq cm is allowed for the antenna or fuel bottle if necessary.

No major parts of the body may be lost during racing. Damage must be repaired in the pits immediately if so directed by the Race Director. It is not allowed to cut holes into the body. If there are holes shown on the 1:1 scale body for either intake or output of air then it is allowed to cut them out.

Only bodies that are approved by EFRA will be allowed to race in EFRA GP and EC events. The body must have a EFRA Registration Number moulded in. The cut outs for Group "C" must follow the following definition:

Side windows and rear windscreen may be removed. It is not allowed to bend windows to the outside - all parts of the vehicle must be covered, except:

- a) cooling head of engine
- b) air filter
- c) aerial (max. 10 mm)
- d) outlet pipe of muffler
- e) fuel filler cap
- f) roll-over bar

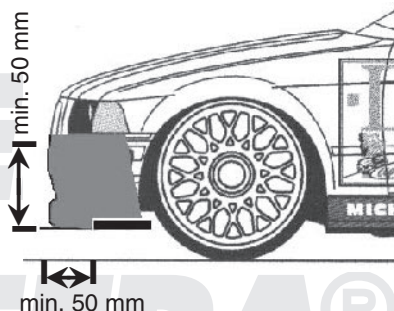
Only if these parts are extending the body. Cut outs for above mentioned parts are to have no more than 10 mm clearance. In addition to this, the following holes are allowed:

- g) for muffler outlet
- h) for fuel filler cap (50 mm when viewed from above)
- i) for radio switch (max. 10 mm)
- j) for spark plug, spark shoe (max. 20 mm)
- k) fuel mixture valve (max 15 mm)

The start numbers must be placed according to the drawing (and the corresponding picture) . For Formula cars the side pots had to be used to fit the starting number. About the design of the Car numbers see 5. General Requirements EFRA Events 5.2.5

5.1.3 BUMPER

- a) A bumper must be fitted to the car chassis.
- b) Bumpers must be designed in a way that they fill the front part of a car body completely. The material used must be flexible like PURIM or other foams that are used in car construction to absorb energy. PURIM type foam min 50 mm height and minimum 50 mm overhang on any solid or semi-solid type flat plate or skid at the front of the car.



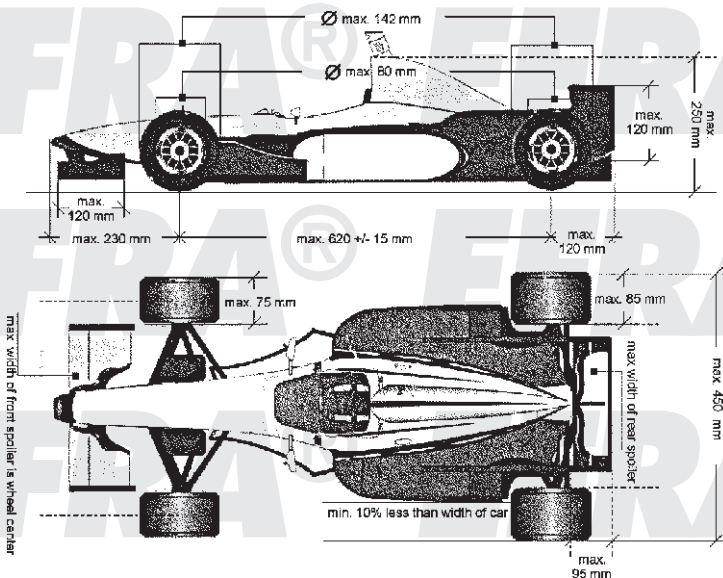
5.2 LARGE SCALE FORMULA

Only Formula one cars following the FIA 2000/1 (or younger) Formula One Regulations are allowed. Bodies must be the model of a existing car from the season 2000/1 or younger. Paintwork and colour is free. The design of the visible suspension parts must have the same appearance than the original F1 cars.

All cut-outs must exist also in the full size car. Cuttings for engine and fuel tank are allowed in the area of the tank seal, starting device and adjusting screws for carburettor i.e. choke, neutral gear etc.

5.2.1 TECHNICAL SPECIFICATIONS

Minimum weight dry	10.000 g
Width Formula maximum	450 mm (incl. tyres)
Height maximum	250 mm
Wheel base	620 mm +/- 15 mm
Tyres front diameter	142 mm +/- 5% = 134,9-149,1mm
Tyres rear diameter	142 mm +/- 5% = 134,9-149,1mm (front and rear tyres must have the same diameter)
Tyre width front minimum	60 mm, max. 75mm



Tyre width rear maximum

85 mm, rear wheels must be min. 5 mm wider than the front wheels

Rims outside diameter

80mm +/-5mm, indicators must be the same on tyres and rims.

No mixture of +/- allowed

5.2.2 TYRES

Tyres must be semi-pneumatic rubber grooved type (4 grooves) Min. depth 1 mm before the start.

In case of rain the use of rain tyre can be allowed by the race director.

Only 2 complete sets of tyres are allowed for the heats and will be marked by technical inspection with the registration number of the driver.

5.2.3 FRONT SPOILER

Max width 375 mm max. cord 120 mm, /No part of the front wing may exceed the centreline of the front wheels. The front spoiler must be fixed at the chassis, so that it can bend up or down in case of an accident.

REAR WING

The rear wing must fit into a side profile box of 95x120 mm. The number of added wings inside is free. The rear wing must not be wider than the space between the rear tyres.

The front part of the car should not overhang the centre of the front wheel by more than 230 mm. The rear wing and a the diffuser should not overhang the car by more than 120 mm.

The width of the side-pods must be min. 10% less than the overall width. They should not be higher than the tyres.

5.2.4 TANK SIZE, ENGINE RULES, AIR BOX, MUFFLER ETC.

Air box and muffler, tank size, engine rules, etc have to follow Large Scale General Technical Specifications.

Exhaust outlet pipes must exit within the body shell side pods and point down to the track.

5.2.5 F1 WINGS

Front and rear wing are part of the bodyshell of a F1 car and must be repaired immediately if they get damaged or come off the car.

5.3 1:5 Scale TOURING CARS

There is one series to recognise in accordance to the 1:1 scale series namely the Touring Car Championship Series, following FIA class 2 Super Touring Car, FIA Group N and Touring Cars Super 2000.

5.3.1 GENERAL SPECIFICATIONS

The carbody has to comply with the calculated scale dimensions 1:5 with the allowance of using the following tolerances.

Length: within scale +/- 5%
Width: max. 395 mm measured at the widest point of the bodyshell

Height: within scale +/- 5%

Tank capacity: 700 cm³

Minimum weight, without fuel: 10.000 g

Maximum weight, without fuel: 12.000 g

5.3.2 All 1:5 cars have to be genuine scale in all details and proportions and be a fully detailed model of an existing 1:1 touring race car. If the allowed tolerances are used, then all parts of the model in that particular view have to be within the same sign (wheelbase-, length,- //wheelbase+, length+). Mixtures of car design's are not allowed.

The minimum length of a Super Touring Car is 4.200 mm that gives a minimum length of 798 mm in scale including max.-tolerance.

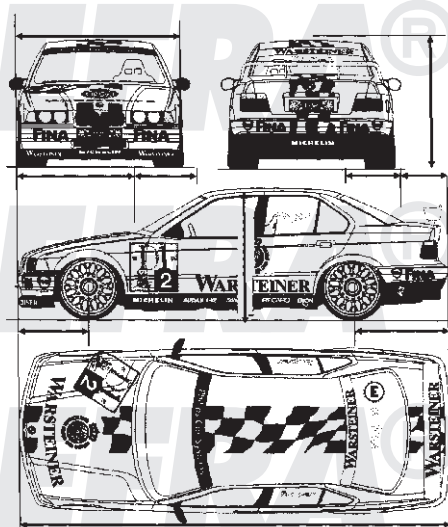
All bodies that are produced world-wide, descend from a original touring car racing and are commercially available, under consideration of Paragraph 5.3, will be allowed.

Only bodyshells that are approved by EFRA will be allowed to race in EFRA sanctioned events. The EFRA-homologation number have to be permanently engraved or moulded in within the space normally used for car-registration numbers at the rear end of the model.

5.3.3 BODY

Bodies have to follow the description in point 5.3.2. They have to be properly fixed to the chassis and must cover the outer edge of the wheels at the centre of the axle when viewed from the top.

It is not permitted to cut the windscreen out. The side and rear windows may be cut out for cooling. It is not allowed



to open them by cutting out only some holes. Also it is not allowed to mould air channels into the side windows to guide air into the interior.

The body shells have to be painted and all windows to remain clear.

All parts of the car have to be covered by the body. Only the radio antenna is allowed to come outside. All openings in the body have also to be in the existing 1:1 race car.

It is not allowed to modify the car-body by cutting it over the marked trim lines or to widen it by heating it or parts of it.

The start numbers must be placed according to the drawing (and the corresponding picture) . For Formula cars the side pots had to be used to fit the starting number. About the design of the Car numbers see 5. General Require-



ments EFRA Events 5.2.5

Only allowed for manufactures:

Aerodynamic modifications at the front, the sides and the rear below the wheel hub centre are free subject to the requirements for ground clearance, overall length and overall width.

The modifications have to correspond to the original. The materials have to be the same as that of the bodyshell. The homologation number has to be engraved. A photo of the modification 1:1/1:5 have to be sent to the responsible Homologation Officer.

5.3.4 GROUND CLEARANCE

The measurement of the body shell height will be made with 6mm ground clearance.

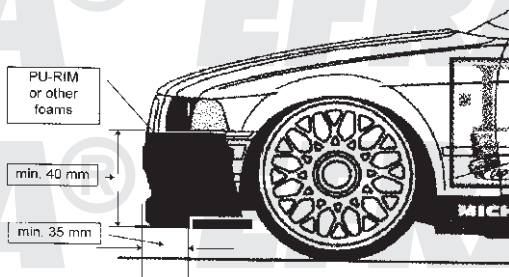
5.3.5 WING/SPOILER

A single rear wing is permitted as long as it does not exceed the front view profile and the length of the car. The wing has to fit in a side "profile box" measuring 60 mm x 60 mm per side and should not overhang the end of the car.



5.3.6 BUMPER

A bumper has to be fitted to the chassis. Bumpers have to be designed in a way that they fill the front of a car body completely and be a minimum height of 40mm. The material used has to be flexible



like PU-RIM or other foams, that are used in 1:1 car construction to absorb impact energy.

At no point may any part of inflexible material for bodysell mounting protrude from the body more than 10mm.

5.3.7. TYRES

Rim Diameter max.: 107 mm

Rim and fitted tyre Diameter: max.: 136 mm

Rim and fitted tyre width - front max.: 75 mm

Rim and fitted tyre width - rear max.: 80 mm

Only semi pneumatic rubber is allowed. Foam tires are not allowed.

5.4 Large Scale Off - Road Rules

5.4.1 Bodies and Wing.

The bodies must be such like used in Off Road, Desert and Trial events. It is allowed to use a wing in the following dimensions

a.) wing body max 300 mm x 140 mm

b.) height max 360 mm suspension fully compressed

c.) Overhang max 150 mm from the centre of the rear axle

5.4.2 Safety.

Cars with open chain drives and gears, to have a protector . There must be a front plastic bumper fitted to the car.

5.4.3 Dimensions.

a.) length max. 820 mm

b.) width max. 480 mm suspension fully compressed

c.) height max. 360 mm suspension fully compressed

d.) weight min 8000 Gramm (8 Kilos)

e.) Fuel tank size max 700 cm³

5.4.4 Engines.

1 Zylinder/2 stroke engine up to 26 cm³ with similar engine rules as Large Scale IC track, regarding liners, cooling, transmission ports, ignition, and the ban of rotary valve and Wankel engines.

5.4.5 Chassis and Transmission.

Only 2 RWD allowed. The transmission gear had to be fixed.

5.4.6 Noise.

The engine had to be equipped in minimum with a 2 chamber pipe who don't exceed the level of 81 dB (A) measured in 10 meters, 1 meter over the ground.

This pipe had to be inside the max dimensions of the car.

5.4.7 Fuel.

To follow 4.1.13.

5.4.8 Brakes.

A car must have brakes to be stopped.

A mechanical failsafe at the carburettor is mandatory. (Spring at the throttle valve)

5.4.9 Race Format.

To be followed Appendix 2. 1:8th IC off road.

Measurements Bodyshells

Tolerances (max.):

395mm $\pm 1.5\%$

Producer / type FIA Super Production / Super 2000	Measurements original-racecar				Measurements model scale 1:5				
	min. length 4200mm	length	width	height	wheelbase	length	width	height -5%	Homologation No.
Alfa Romeo 156 2.0	2595	4430	1745	1311	520	886	349	249	5029, 5035, 5036
Alfa Romeo 156 2.0 GTA ETCC 02	2610	4430	1815	1311	522	886	372	249	5035 am,5043/04
Audi A4 2.0 STCC 05	2648	4586	1820	1337	530	917	364	254	
3er BMW (320i/318i/318is) E36	2700	4433	1698	1270	540	887	340	241	5022
3er BMW 320i E46 ETCC 02/03	2742	4490	1809	1415	548	898	362	268	5039/03, 5040/03
3er BMW 320i E90 WTCC 06	2760	4520	1817	1277	552	904	363	243	
Chevrolet Lancelotti/NUBIA WTCC 05	2620	4500	1809	1345	520	900	345	256	
Honda Accord Euro R ETCC 04	2685	4665	1831	1325	537	933	366	252	5045/04, 5048/06
LADA 21106 WTCC 06	2492	4265	1680	1300	498	853	336	247	
LEXUS IS 200 BTCC	2670	4400	1725	1295	534	880	345	246	
Mercedes C-Class STCC 05	2715	4606	1828	1350	543	932	366	256	
Vauxhall Astra Sport Hatch BTCC 05	2614	4288	1773	1320	523	858	355	251	
PEUGEOT 307 ETCC 04	2608	4202	1750	1480	522	840	350	281	
PEUGEOT 407 STCC 05	2725	4676	1831	1345	545	935	366	255	
VOLVO S60 2.0 ETCC 02	2715	4756	1860	1328	543	915	372	252	5041/03
Ford Focus WTCC 05	2640	4342	1840	1340	523	858	340	254	
SEAT Leon WTCC 05	2600	4328	1820	1338	520	866	364	254	
SEAT Toledo Cupra ETCC 03	2535	4436	1812	1316	507	887	362	250	5044/04

All informations without guarantee. Source material: Touring Car World 2003, 2004, 2005 and touring car race series around the world. This list will be continued.

Cars written in italics not yet available as models with EFRA-Homologation

Updated: **07.02.2006**

APPENDIX 6

1/10TH I.C. TRACK CARS

1 GENERAL

The EC 40+ for 1/8ths scale will be combined with the open EC for 1/10th IC Track (235mm), (open drivers of all ages).

One special EFRA medal will be awarded to the fastest driver under 17 years of age, so that everybody of 16 years, during the race dates, of younger, can compete for this medal.

2 RACING FORMAT EFRA EUROPEAN CHAMPIONSHIPS AND GRAND PRIX

See point 2.2 till 2.9 Appendix 7: 1/10th 200 MM SCALE IGNITION TRACK CARS

3 TRACK SPECIFICATIONS

See point 3.1 till 3.17 Appendix 7: 1/10th 200 MM SCALE IGNITION TRACK CARS

4 RACE PROCEDURES 1/10 235MM

See point 4.1 till 4.8 Appendix 7: 1/10th 200 MM SCALE IGNITION TRACK CARS

5a TECHNICAL INSPECTION

See point 5.18 till 5.19 Appendix 7: 1/10th 200 MM SCALE IGNITION TRACK CARS

5b TECHNICAL SPECIFICATIONS

5.1. GENERAL ENGINE RULES

The engine shall be air-cooled with front rotary shaft valve. Two stroke induction type and may have a maximum of six (6) gas ports including the exhaust port. The outer edge of the piston must be the highest point of the piston itself, no form of forced induction is allowed or any form variable port timing. Only glow plug ignition is permitted. No holes in the piston are allowed.

5.2. ENGINE DIMENSIONS

Any engine up to max 2.5 ccm allowed.

5.3. FUEL TANK

The fuel tank including filter and fuel pipes up to the carburettor may hold a maximum of 75,00 ccm No loose inserts allowed.

5.4. MUFFLERS

An EFRA homologated muffler, not producing more than 80 dB's at 10 meters distance and 1 meter high on a car equipped with an INS box, must be fitted. In case of water on the track the INS box may not be compulsory. The decision to be made by the race director and published on the result sheet.

This muffler must have the following dimensions:

Tail pipe maximum internal diameter (*)	5,20 mm
Tail pipe minimum length	15,00 mm

The tail pipe must be oriented n or below the horizontal.

(*) This dimension includes a tolerance to account for manufacturing variations in commercially available tubing.

The EFRA homologation number must be engraved on the sidewall of the muffler. The homologation specification (dimensions) of the INS box for scrutinizing purposes can be found at the end of Appendix 8.

5.5. OVERALL DIMENSIONS

	Minimum	Maximum
Wheel base	206,00 mm	280,00 mm
Track width		250,00 mm
Overall length		490,00 mm

5.6. WEIGHT

The weight limit will be checked with the cars ready to race, but with empty fuel tanks and including a transponder.

"15" engine size minimum weight: 1.975,00 grams.

5.7. FUEL

Fuel may only contain methanol, oil/lubricant and nitro methane. The specific gravity of the mixture may not be heavier than 0,87. Based on normal oil densities, this will give a maximum of 16% nitro. Verifying this will be done by a simple floater, called nitromax 16 which is commercially available. If the fuel is not within the specifications of this rule, the driver is immediately disqualified for the rest of the event.

5.8. TYRES

Tyres must be black, except for side wall detailing.

Tyre diameter front 75,00 mm maximum

Tyre diameter rear 80,00 mm maximum

Tyre width front 30,00 mm maximum

Tyre width rear 51,00 mm maximum

No tyres additives or cleaners allowed.

5.9. RIMS

Maximum diameter for front and rear rims is 51,00 mm.

An edge to reinforce the rim on the inside of 2,00 mm thickness and 3,00 mm height is allowed, flange diameter max. 57,00 mm. Any fixing bolts or other equipment installed in the wheel rims, may not extend beyond the exterior of the rim.

5.10. BODIES AND WINGS

GT bodies only. One cooling hole may be cut in the front windscreen with a maximum dimension in any direction of 50,00 mm.

Only the front side windows and the rear window may be removed, partly or totally, other windows must remain clear.

All parts of the vehicle must be covered, except:

- Aerial (max. 10,00 mm).
- Outlet pipe of muffler (reasonable clearance).
Only if these parts are extending the body.

In addition to this the following holes are allowed:

- For muffler outlet.
- For re-fuelling (max. 30,00 mm).
- For glow plug (20,00 mm).
- Fuel mixture valve (max. 10,00 mm).

Rear of the body may not be cut away higher than 45,00 mm, measured with a 10,00 mm spacer under the chassis plate, and rear sidelight details must remain.

Roll-bars must be kept under the body.

Wings are allowed only if fitted to original car, and must be in the original position and may not project above the height of the roof line.

Side dams may be fitted but must be a reasonable representation of those fitted to the original car and may not be wider than 55,00 mm and higher than 25,00 mm, fit in a rectangle with these measurements, and may not project the height of the roof line.

	Maximum
Wing width	230,00 mm
Wing chord	55,00 mm

(20,00 mm extension is allowed, but must be clear and unpainted and still may not project above the height of the roof line).

A level meter should be used to verify that wings and the allowed 20,00 mm extension do not project above the height of the roof line with a 10,00 mm spacer under the chassis plate on level.

Cars must be equipped with a flexible "plastic" bumper to minimize injuries. The bumper may not protrude outside the body.

5.11. GENERAL

The cars will be 2wd of 4wd driven. Mechanically operated brakes must be fitted acting on the rear wheels only. Maximum two speed transmission to be used.

5.12. CLAIMING

Following the main final, the winner's engine may be claimed by another participant of the same final for the total claiming fee equal to the engines retail price, plus 10%.

The written claim must be made to the race director with the cash for the full amount of the claim within 20 (twenty) minutes of the race finish.

If more than one competitor wishes to place a claim, a simple lottery will be used to decide the claimant. All market devices such as heat sinks, motor mounts and air cleaners, are excluded from the claim. If the winner does not wish to surrender his/her engine, he/she must forfeit the race, there will be no protests.

5.13. TELEMETRY

It is not allowed to use any electronic device with the exception of:

- Two radio channels of the receiver which will be used to operate steering, throttle & brakes.
- A passive data recording system to record functions of the car.
- A feedback recording of information system can only be used to the end of controlled practice.

APPENDIX 7

1/10TH 200 MM SCALE IGNITION TRACK CARS

1 ALLOCATIONS FOR THE EUROPEAN CHAMPIONSHIPS

- 1.1. The allocation for the European Championship 1/10th 200 mm I.C. scale will be established by the section meeting and published in the minutes.
- 1.2. For allocation and re-allocation procedures (see general 6.2.). Allocations will only be offered for EC and WC events to those countries that have written to quest places.
- 1.3. All countries receive re-allocations place in the order of the allocation-list, unless stated otherwise in this list.
- 1.4. The number of entries for EFRA EUROPEAN CHAMPIONSHIPS is 120 maximum of 150. Accommodations for at least 120 drivers must be sufficient for all participants.

2 RACING FORMAT EFRA EUROPEAN CHAMPIONSHIPS AND GRAND PRIX

- 2.1. European Championships are held in the following class:
 - a) The European Championship Touring Car Sedan bodies will be held on the 3rd weekend of August. In the year there is an IFMAR world championship. Than dates must be separated with at least 4 free weekends between the finals. It will be open to EFRA licensed drivers. One special EFRA medal will be awarded to the fastest driver under 17 years of age, so that everybody of 16 years during the race dates, or younger, can compete for this medal.
 - b) The allocated dates of the EC may be exchanged by simple majority vote at the AGM in the years that a world championship is being held. Allocations and re-allocations procedure will be fixed at the AGM's section meeting. The format of EFRA GP's could be the same as for the EC, but may be shortened up depending on the number of entrants.
 - c) If there is a world championship 1/10th 200mm IC Track in Europe then there is not a European Championship A organised during that year
 - d) A European Championship for 1/10th IC 200mm B drivers may be organised each year.

To be run if possible the first weekend of May.

Entries will not be allowed for 1/8 scale A licensed drivers, 1/10th 200mm scale A licensed drivers, for the finalists from the EC of the following classes Electric 200mm touring cars, large scale, Electric Buggy, 1/8 Buggy A of the preceding year.

Winner B-EC will retain A-license for 3 years . Other finalists from B-EC are excluded for 2 year to run the next B-EC.
 - e) A & B LICENCE

To qualify for an "A" licence, a driver must be placed 1-30 in the EFRA ranking system. All other applicants will be classified EFRA "B" licensed. These drivers must be approved by their own National Association as having sufficient experience and skill to take part in an International competition.

World Champion will retain "A" licence for the next 5 years.

European Champion will retain "A" licence for the next 4 years.

European Champion B-drivers will retain "A" licence for the next 3 years

The EFRA ranking list for 1/10th IC 200mm is based on the last 2 EC's, the last WC and the best result of one GP in the past year. An EC result is the result of the A EC from August. The total result of this list will decide upon A (start in 2006) and B licence at the end of the season. For all the races involved in this ranking, points can be achieved for the result after the finals (see General rules points table section 3.3.6) . and 50 % of those points for the result after the qualifications. Both results will be added together for the racing. During qualification A and B licensed drivers must be separated in different heats. Winner B -EC will retain A-license for 3 years .

- 2.2. Free practice for EC is only allowed from Monday preceding the race. However pit lane refuelling may be forbidden during free practice at EC.
- 2.3. Free practice for Grand Prix events must be allowed at least from Friday preceding the event (see general 8.2.).
- 2.4. General qualifying format for EC and GP's minimum 4 and maximum 6 series of 5 minutes heats depending on the number of drivers. If there are 60 drivers or less, 6 rounds. If there are > 60 < 80 drivers, 5 rounds. If there are more than 80 drivers, 4 rounds. With everybody qualifying for Christmas tree sub finals and 1-4 qualifying directly to final, depending on time available at Saturday all finals higher than 1/64 will be shorter than 20 minutes (for instances 10 minutes). Duration of finals higher than 1/64 to be set at team managers meeting.
- 2.5. Time schedule. The time schedule should not be rigid but adapted to the number of entrants, as a guideline at EC with 120 or more entrants the schedule should be as follows:

Monday-Thursday	Free or controlled practice.
Thursday & Friday	Technical inspection.
Friday	Controlled practice and 1st series of qualifying in the afternoon.
Saturday	Round 2 till 4, lower finals till 1/64.
Sunday	1/32 finals upwards, practice main final direct qualifiers minimum 10 minutes, maximum 20 minutes between 1/8 and ¼ final; ½ finals final.

The race director should configure the heats based on the EC form last year. The heats shall contain a maximum of 10 drivers. These practice heats will be of 10 minutes duration. The schedule of all practice heats including each practice heat starting time will be carried out by the organization of the event and it should be given tot the team managers & published for general knowledge.

- 2.6. General sub-finals and final formats for EC and GP: the sub-finals are 20 minutes up till 1/64 finals. Time for all finals higher than 1/64th to be set at team managers meeting. The duration of the final is 45 minutes, the best 3 of each sub-final move up to the next final. Following the semi-finals, the best 2 of each semi-final move up to the final, plus the best 2 remaining drivers from the 2 semi-finals combined. When racing conditions are wet in the 2 semi-finals, the best 3 of each semi-final move up to the final. Starting order for the drivers who moved up to the final is based on number of laps and time. In different circumstances it will be number 1 from the A-final who gets the number 5 and the number 1 from the B-final who gets the number 6 etc. Sub-final B even is the first final to start on the Saturday afternoon.
After the first semi final the first five cars will be put in Parc Fermé in technical inspection and the will be released after completion of the technical inspection

- of the 2nd semi final. This will give all drivers that proceed to the final equal time for preparation.
- 2.7. Frequencies for semi-finals and finals are not published and must remain secret. The race director will allocate frequencies to the drivers personally after they have proposed to hem 2 or 3 frequencies. A radio check must be made before the start of the final.
 - 2.8. During qualifying heats only 1 mechanic is allowed in the pit lane. During sub-finals and finals, 2 mechanics are allowed.
 - 2.9. Marshal's for EC's and GP's are compulsory for the sub-finals and final and will be provided by the organizing club. When the organizing club has no marshals to provide for the qualifying heats, drivers must be marshalling.
 - Only drivers may and must marshal the heat following their own. The first heat will be marshalled by the drivers of the first heat.
 - Failure to provide a marshal or competent substitute will result in the loss of the driver's best quality time. A substitute marshal is only allowed if the driver is physically disabled and must be notified to the race director.
 - The organize must provide a marshal for any unfilled position when previous heat had less drivers or marshal missing. Marshals should be posted every 30 meters and supplied with gloves and/or other protection. Other than running marshals all other marshals will remain at their posts at all times during racing. No other persons, except officials are allowed on the track while the race is in progress.

3 TRACK SPECIFICATIONS

- 3.1. Track surface should be unsealed or coarse finish with any joints smoothed.
- 3.2. Minimum length must be 200 meters (advised 240-300 m).
- 3.3. Minimum width of the track will be 4 meter between marking lines. The maximum width is 6,5 meter. The marking lines must be 8-10 cm wide and either white or yellow. They must be approximately 20 cm away from the edge of the racing surface.
- 3.4. Maximum distance from the middle of the drivers rostrum to any point of the track must be 60 meters.
- 3.5. Vision, no obstacles may interrupt the vision form the drivers rostrum to any part of the track.
- 3.6. A broken line may be drawn in the middle of the straight to aid vision. No lines may be drawn in corners other than the marking line.
- 3.8. Track design must include both right and left hand turns, and must have a straight of minimum length of 45 meters.
- 3.9. Outside barriers must provide a positive means of stopping a car which misses a corner or runs out of control. The primary consideration for selection of the outside barriers shall be the protection of the spectators and not the cars.
- 3.10. Inside barriers must deter corning cutting and prevent cars reaching other parts of the track. Inside barriers must be positioned and dimensioned to prevent cars from flying over the outside barrier into the public enclosures. The barriers must be smooth. When cones or dots are used, they should not be higher than 5 cm.
- 3.11. Barriers must be a minimum of 20 cm away from the marking lines on the track.
- 3.12. The inner and outer surrounds to the track must be of grass or other suitable materials such as concrete. The object of these surrounds is to slow down any car that leaves the racing surface. The car must be able to leave the infield of outfield on their own to minimize the need for marshals assistance.

- 3.13. Marshal posts must be positioned at 30 mtr. intervals around the track. They may not obstruct vision of the drivers. The post must be numbered. When a post is located at a dangerous part of the track (i.e. the straight of a fast corner) this post must than provide protection for the marshal (a wall, tyres, a gate, etc.)
- 3.14. A start/finish line must be painted across the track, preferably in front of the time keeping position. The first start line box must be painted more than 10 mtr. away from the following corner.
- 3.15. For Lemans type of starts, 10 numbered boxes will be located on the edge of the track, at an angle of 20-45 degrees to the track, minimum 2 mtr. And max. 4 mtr. apart. The boxes must be 70-100 cm long and 30-40 cm wide (see 3.14.).
- 3.16. Formula 1 Grid start. The grid will be painted on the track, preferable on the straight. The invitations should specify that the formula 1 start will be used. Two rows of numbered boxes will be located on the track with approx. 1.5-2 mtr. space between each row. One side number 1, 3, 5, etc; on the other side 2, 4, 6, etc.
- 3.17. Race directors must use the staggered starting system (see general rules 9). Race directors involved in EFRA sanctioned events may be invited to a briefing meeting, covering interpretation of the rules and management of international races, so that they feel confident to manage a good race.

4 RACE PROCEDURES 1/10 200MM

- 4.1. (See also general race procedures chapter 8). The arrangements of the heats and the numbering is left to the discretion of the organizer. The drivers must stand adjacent to their numbers on the rostrum; the mechanics must remain in their boxes along the pit lane. For all finals, drivers with the lowest starting umbers may choose their position on the rostrum and the mechanics must stand under the driver where this is possible.
 - a There must be a 3 min. gap between the end of one heat and the start of the next heat. Also a minimum of 2 minutes must be allowed between the issuance of the transmitters and the start of the heat.
 - b An audible warning will be given at 1 minute and again at 30 seconds prior to the official start, in English and other languages as appropriate.
 - c From 30 seconds till 3 seconds, the cars must be hold at the starting boxes. If a car is not at the starting box at 3 seconds due to unforeseen problems, the car may start from the pit lane after other cars have officially started. The race director and referees will monitor for the abuse of this facility.
 - d From 10 seconds until 3 seconds prior to the start, a second by second countdown will be made in English.
 - e In case of Lemans or formula 1 grid starts at 5 seconds prior to the start, the starter will lower the starting flag and at 3 seconds the flag will be fully down. Mechanics will all step back 1 mtr. The cars must remain in the boxes, no part of the car touching the start line.
 - f From 3 seconds the verbal countdown stops and the actual start signal will be given by the starter after a period o between 0 and 5 seconds has elapsed. If the grid is not tot the satisfaction of the starter, he may require a re-start, re-commencing the countdown from 30 seconds.
 - g The official start signal will be audible by means of a hooter, operated by the starter. This signal will also start the timing systems.
 - h Early starts (i.e. any part of the car touching the starting line) will be penalised with a "stop and go" penalty. The time for this "stop and go" has to be set at the team managers meeting before the actual race starts and will

- have a maximum of 10 seconds. This penalty is issued by the starting official or the time keeping official and must be announced immediately after the start. The penalty will be marked on the result sheet.
- i Under no circumstances will the race be stopped due to a jump start. 10. The starter may only interrupt the race and make a re-start in the event that he considers the starting procedure or the start was not carried out correctly
 - j Delayed start. As long as the starter has not called 30 seconds (the trial lap, see 4.3. is part of the procedure after 30 seconds), any participant of the semi-finals and final may request a delay of 10 minutes to carry out repairs on his car. This delay can be granted only once for each semi-final and final.
 - The track is closed, if the delay is requested as a result of frequency of radio problems.
 - The track is open, if the delay is requested for mechanical repairs or problems. Any driver asking for a delay will start from the end of the grid (11th position to be painted on the track) or from the pit lane in case he is not in time at the grid.
- 4.2. Starting procedure of heats. Starting for qualifying heats will be from the start line using staggered start one by one in the following order:
- | | |
|----------|--------------------------------|
| Round 1: | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 |
| Round 2: | 4, 5, 6, 7, 8, 9, 10, 1, 2, 3 |
| Round 3: | 7, 8,, 9, 10, 1, 2, 3, 4, 5, 6 |
| Round 4: | 10, 9, 8, 7, 6, 5, 4, 3, 2, 1 |
- 4.3. Starting for sub-finals and final will be on a Lemans type grid or a formula 1 grid, depending on the track layout, with the faster qualifier starting in front of the slower. During sub-finals and final, a trial lap is driven to avoid frequency problems and to check the transponders. Cars will be released one by one by starter.
- 4.4. 1. All qualifying runs and finals are ran by "time plus next lap" system. Qualifying heats are 5 minutes duration, lower finals and semi-finals 20 minutes and final 45 minutes.
2. When the time is over, an audible signal is given. A car finishes when it passes the finish line after the finish signal is given. The car must immediately return to the pits and may not hinder other cars still racing.
3. In case of doubt (on the finish line when time is over), a car may race one more lap and finish. Whether he finishes or not when time was completed, is up to the time keepers and cannot be disputed.
4. After returning to the pits, the engine must be stopped immediately and the transmitter turned off and impounded.
- 4.5. Qualification order and finals.
- a After all series have been completed, the qualification order is established by taking the best result of each driver.
 - b In case of more than one driver recording identical best results of qualifications, the next best result is taken.
 - c In the case of more than one driver recording identical results in a final, the driver starting with the higher start number is classified as the faster, e.g. if numbers 5 and 5 have equal times, 5 is deemed to have higher final placing.

- d The sub-finals and final are run according to the schedule printed in the official race program, which may only be changed by team managers majority vote.
 - e After all sub-finals and final are completed, a final result list is prepared based on laps and time, bearing in mind the sub-final order. In case of rain see 4.6.
- 4.6. Rain situation. In case of different weather conditions during sub-finals, the final classification will be as follows: place 4 of sub-final A and place 4 of sub-final B will both be awarded place 11th equal in the general classification. Place 5 of sub-final A and place 5 of sub-final B will both be awarded place 13th equal in the general classification. And so on...
- 4.7. Race interruptions.
- 1. In the case of a race which is interrupted for more than 60 minutes for reasons beyond the control of the organisers (bad weather conditions with safety risks for all persons at the meeting), the referees together with the Race-director will decide whether to cancel or continue the meeting.
 - 2. In the case of an interruption of a heat the entire heat will be re-run.
 - 3. In the case of an interruption of sub-final of a final, the following procedure will be used:
 - A. If less than 10 minutes of the final have been run, the results will be cancelled and a new start given for the total time of the final. Vehicles may be repaired before the new start.
 - B. If more than 10 minutes of the final have been run, the results at the moment of the interruption will be kept. The new start will be given for the time which remains to complete the final. The two results will be added to give the final and definitive placing. If the second start cannot be made for any reason, the results from the first part will be used as the final and definitive placing.
 - C. When the interruption takes place after 75% or more of the race is past, the results as at the time of the interruption becomes the final result. At the moment of the interruption of the race, the drivers will leave their vehicles on the start line under the control of the race director. They may switch off the radio and stop the engine. There will be no repairs carried out. Who does not observe this rule will be immediately disqualified.
- 4.8. Rain procedure during qualifying.
- 1. The race director and the referees are jointly responsible for the decision to stop a race in the event of rain.
 - 2. On the result sheets the race director or the appointed official must mark a heat "wet" when the heat was raced under wet conditions. On the corresponding record sheets, this must also be marked. The race director together with the referees will decide in case of doubt. Heats are generally considered to be "wet" when there is any rain or moisture on the track and it is obvious to the race director that the cars cannot perform to their maximum capability. The race director may decide to postpone qualifying if it is likely that qualifying can be resumed within reasonable time.
 - 3. When all drivers have had at least one dry heat, all results will be counted.
 - 4. When weather and time permits, the race director may decide to offer an extra heat to those drivers who did not have a chance to drive a dry heat. (i.e. when most drivers had 2 resp. 3 dry runs, a 2nd resp. 3rd run may be offered to those who had only 1 resp. 2 dry runs.

5. When not all drivers have had a chance to run a dry heat, only the wet results will be counted.
6. When continuation is judged to be senseless or when other drivers should be offered a fair chance to drive under dry conditions, the race director together with the referees may decide to end a heat or cancel a complete heat (4.8.1.).
7. When all drivers have had at least 1 dry heat, the race director will postpone the qualifying until the track is declared fully dry again. If it is likely that this will interrupt the qualifying for more than 1 hour, the race director may decide to open up the track for controlled practice.

5 TECHNICAL SPECIFICATIONS

All measurements referred in this appendix are minimum or maximum values. All measurements for the motor dimensions to be considered with 2 digits behind the comma, all other measurements 1 digit behind the comma. Measurements must be respected within their maximum or minimum values under all circumstances.

- 5.1. The engine may have a total capacity of not more than 2.11 cc. They shall be air-cooled, with front rotary valve, two-stroke induction. They engines may have a maximum of four (4) ports in the liner, including the exhaust port, seen with the piston at lowest position. No form of forced induction is allowed. No form of variable port timing.

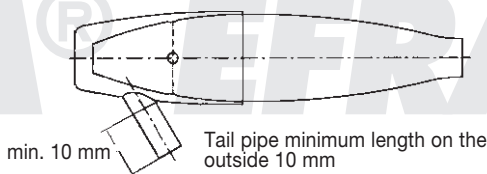
Only glow plug ignition is allowed. One additional gap in the bottom (skirt) of the piston is allowed. Additional slits or holes in the liner for cooling purposes are allowed as long as they do not reach the top of the piston at lowest position. Standard and conical glow plugs allowed.

Where ever we say hole in this rule we mean a hole that is surrounded completely by material.

- 5.2. Engine internal modifications are allowed as long as they are within parameters of rule 5.1.
- 5.3. A maximum carburettor diameter of 5,50 mm.
- 5.4. The fuel tank including filter and fuel pipes up to the carburettor, may hold a maximum of 75,00 ml. No loose inserts allowed.
- 5.5. Overall dimensions.

Minimum (mm)	Maximum (mm)	
Wheelbase	230,00	270,00
Width without body	170,00	200,00
Width with body	175,00	205,00
Length incl. body & wing	360,00	460,00
Height of the top of the roof (measured with a 10 mm spacer under the chassis plate level)	120,00	175,00
Wing width incl. side dams	125,00	200,00
Wing		55,00
Side dams		35,00 x 50,00
Wing overhang (at rear)		10,00
Wheel dia. (excl. tyre bead)	46,00	50,00
Wheel width (incl. tyre bead) and tyre width (across side walls):		
Front:		30,00
Rear:		30,00

- 5.6. Tyres/Rims. Tyres must be black, except for writing on the side walls. Foam and/or rubber tyres can be used. Treatment of the tyres with additives is prohibited. Wheels must be fixed by a screw or nut. The screw or nut installed in the wheel rims may not extend beyond the exterior of the wheel rim. Quick change wheel systems are not allowed. No automatic system to change the wheels allowed (just manpower).
- 5.7. All vehicles must be equipped with brakes and a clutch in such a manner, that the vehicle may be held stationary with the engine running.
- 5.8. Muffler An EFRA homologated muffler of approved double chamber design, including silencer chamber, must be fitted having the following dimensions: Tail pipe minimum length: 10,00 mm (measured from the outside of the pipe). The tail pipe must be oriented on or below the horizontal. The EFRA homologation number must be engraved into the muffler. Each individual car must not produce more than 82 dB, measured at 10 meters distance and 1 meter high. EFRA's definition of a noise is always final.



- 5.9. The front bumper must follow the body contour and must be constructed so as to minimize injury that may result from being hit by a car. The bumper must be made from foam rubber or a flexible plastic material.
- 5.10. The aerial must be flexible. Carbon, metal, etc. is not allowed.
- 5.11. Bodies. Bodies must be a 1:10 scale in character reproduction of vehicles that exist or have existed. Bodies will be checked by the homologation officer. The scrutiny should be done after the following procedure: The manufacturer of a body has to send the body to the homologation officer within the period from December until the 10th of February. Payment procedure for EFRA, homologation remains unchanged. After being checked, the body will get an EFRA number. This EFRA number in combination with the logo of the manufacturer has to be embossed in the body at the right upper edge of the windscreen. At the 1st of March, a list of all homologated bodies will be made available. Only these bodies can be used at EFRA sanctioned events throughout the year. A body which is sent to the homologation officer after the end of February, can only be used in the following year.
- 5.12. List of approved equipment. All lists of approved equipment (i.e. bodies, mufflers and batteries) must be available on EFRA's webpage from the 1st of March every year. This is the final list for that year and no changes will be made before the next year. Equipment homologated during the year will not be put on the list until the 1st of March next year.
- 5.13. The body and spoiler must be made of a flexible material and be painted properly. All windows must remain clear or be semi-transparent. The EFRA number in combination with the logo of the manufacturer must be embossed in the body, at the right upper edge of the windscreen.
- 5.14. The rear of the body may not be cut higher than 50,00 mm measured with a 10,00 mm spacer under the chassis plate on level.

- 5.15. Details of all front and rear lights, grills, air intakes and windows must be clearly contrasted from the surrounded paintwork. No parts of the car except the muffler outlet, may protrude outside of the body shell, when viewed from above. No parts of the car except the antenna, body posts, transponder, may protrude outside the body shell, when viewed from the side wall.
- 5.16. Cuts outs. Only the following holes and sizes are permitted in the body shells/
One (1) cooling hole may be cut in the front windscreen with a maximum diameter of 50,00 mm. Re-fuelling hole: maximum diameter 50,00 mm, the centre of this hole must be the centre of the fuel filler cap, viewed from above.
Note: cooling hole front windscreen and re-fuelling hole may not be combined. Minimum distance between the holes: 5,00 mm. A hole with maximum diameter of 35,00 mm is allowed just above the engine cooling head for easy glow plug access, and can not be combined with any other hole, minimum distance: 5,00 mm. Both front side windows and the rear window can be removed for ventilation, except for the side rear windows, which must remain intact. Small holes can be made for the body posts, transponder, carburettor adjustment and radio antenna (maximum diameter of 10,00 mm). The hole for the exhaust pipe must be of reasonable size. No other holes are permitted. If the re-fuelling hole is part of the front windscreen, then that hole is to be considered also as the cooling hole with a maximum diameter of 50 mm.
- 5.17. Wings and spoilers. One wing and one spoiler may be mounted to any car (if the original full-size car had more, it is allowed to do the same). Wing and spoiler must be made from a flexible material and be painted. Wing and spoiler may not be fixed to body with piano wire. Basically they must be mounted to the body directly. Wing and spoiler must not protrude outside the maximum height and width of the body (incl. the side dams). Rear wings must be mounted in the same place as was intended by the body manufacturer. The overhang must not exceed 10 mm at the furthest point, to be measured from the most rear point of the body. Side dams may be fitted but must be a reasonable representation of those fitted to the original car, fit in a rectangle with the measurements defined, and must not project above the height of the roofline. The height of the wing may be adjusted but the wing, incl. side dams must not extend higher than the roofline. Wings (excl. side dams) are to be of single moulded construction (no flat packs/bend your own).
- 5.18. Checks at technical inspection.
- Before the race, all cars will be checked and during the heats the following random checks will be made:
 - weight limit
 - muffler
 - motor
 - body and wing, spoiler
 - overall dimensionsThe chassis is to be indelibly marked before the race, and if a driver wants to change it, he must present the new and old to the technical inspection officer.
 - During sub-finals all cars moving up to the next final plus the next one are to be checked. In addition to the above mentioned checks, the following are to be done during sub-finals:
 - weight limit
 - muffler

- body and wing, spoiler
 - overall dimensions
 - marking of the chassis
 - fuel tank capacity
- c) The same checks must be done after the final for the top 4 places.
- 5.19. Fuel may only contain methanol (methyl alcohol) lubricating oil and a maximum of 16% nitro methane in volume. The specific gravity of the mixture may not be heavier than 0,87. An EFRA approved fuel tester, e.g. Nitromax 16 will be available to verify fuel's conformity to the rules at technical inspection.
- 5.20. 4WD and 2WD cars can be used without any technical restriction except those listed in section 5. The use of separate front wheel brakes, except trough transmission is also not allowed (locking of one way bearing is allowed).
- 5.21. The minimum weight without fuel and including a transponder: 1700,00 grams. The weight limit will be checked with the cars ready to race but with empty fuel tanks. The weight will be checked on a digital scale balance and can be done before the start of the heat, sub-final, final or after the end of either. If the weight is found to be under the minimum weight, the driver should be disqualified from the heat, sub-final or final.
- 5.22. The cars shall be measured for width by placing it on a baseboard equipped with two side rails of 20 mm height spaced 200 mm apart, constructed in such a way, that the car can roll freely between them. Baseboard and rails must be constructed of high quality board suitably stiffened to prevent distortion. The car must roll freely between the side rails with any steer able wheel set in straight ahead position without any part of the wheels, bumper, body shell or any other part of the car touching the side rails irrespective of the compression or extension of the suspension. The car shall be measured for length and height in a similar constructed box of internal dimensions 460,00 x 175,00 (incl. 10 mm spacer). Measurement of the wheel base may be made by simple measurement of axle centre distance, but race directors should be prepared to make more exact checks in case of doubt or protests. It is suggested that the wheels are removed and the wheel spindles firmly placed on V blocks whilst accurate measurements are made. It is the responsibility of the driver to ensure that his car complies with the regulations at all times, that it is on the track and the organizer may check any car for compliance with the regulations at any time during the race meeting. If a car is found to exceed the limits of dimensions on checking immediately after a race, positive proof of race damage may prevent disqualification.
- 5.23. Roll bars (roll over bars) must be kept under the body.
- 5.24. Only two (2) servos are allowed.
- 5.25. Its not allowed to use any electronic parts for traction control and braking control with ABS which can control the power by means of a feedback system. It is not allowed to use any form of telemetry with active transmission.
- 5.26. All measurement referred to these rules are maximum or minimum values.
- 6 PENALTIES**
- 6.1. Referees must issue a verbal blue flag warning to slower drivers or to make drivers that are not within the same lap as the car that is about to pass him, to make way and not to obstruct the passing car. This warning must be announced "attention driver (name)".
- 6.2. Failure to respond to the verbal blue flag will result in an official warning and the driver must make a mandatory pit stop for 10 seconds. During this

mandatory stop, the referee will administer the official warning directly to the driver. In the case that there is no possibility to call a driver for a stop and go penalty, the referee and/or race director will announce a time penalty of 10 seconds.

- 6.3. Any driver who is given two (2) official warnings will be immediately disqualified from the entire race.
- 6.4. Deliberate waiting for other cars will be treated as a verbal blue flag offence, a stop and go penalty issued. The referee will advise the driver that this behaviour has been noted and that he should race normally. Failure to follow the referees instructions will result in immediate disqualification. In the case that there is no possibility to call a driver for a stop and go penalty, the referee and/or race director will announce a time penalty of 10 seconds.
- 6.5. Deliberate obstruction of other cars in an attempt to influence the results of a race, will lead to immediate disqualification and loss of his/her international license until after the next event of the same kind (e.g. GP/EC/WC).

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