



IFMAR 1/8th I.C. OFF-ROAD RACING AND TECHNICAL RULES

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SECTION TWO - CAR/TECHNICAL

(To be read in conjunction with Section 1: General Rules for IFMAR World Championships)

2.1. GENERAL DIMENSIONS

The official measurements in the technical specifications are the metric measurements.

- 2.1.a Overall length - 730mm maximum.
- 2.1.b Overall width - 310mm maximum.
- 2.1.c Wheelbase - 270mm to 330mm.
- 2.1.d Overall height - measured from the ground including roll bar at full suspension compression is 250mm maximum (this measurement does not include the receiver aerial).
- 2.1.e The minimum weight limit shall be 3.2kg/7.04lbs for 4WD cars.
- 2.1.f The car shall be measured for width by placing it on a flat base material equipped with two side rails of 150mm height. These shall be spaced 310mm apart and constructed in such a way that the car can roll freely between them. The base material must be constructed of high quality components suitably stiffened to prevent distortion. The car must roll freely between the side rails with any steer able wheels set in the straight ahead position irrespective of the compression, extension or roll angle of the suspension.
- 2.1.g The car shall be measured for length and height in a similarly constructed box of internal dimension 730mm x 310mm, which includes provision for checking the maximum height.
- 2.1.h The measurement of the wheelbase may be made by simple measure of axle centre distances with the suspension in any position. The Race Director should be prepared to make more exact checks in cases of doubt or protest. It is then suggested that the wheels are removed and the wheel spindles are firmly placed on Vee blocks whilst accurate measurements are made.
- 2.1.i It is the responsibility of the drivers to ensure that his/her car complies with the regulations at all times that it is on the track and the race organizer may check any car for compliance with the regulations at any time during the race meeting.
- 2.1.j 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.
- 2.1.k During technical inspection only the driver, one mechanic and the team manager are entitled to be present in addition to Race Officials.

2.2. ENGINES

- 2.2.a Internal combustion engines of not more than 3.5 cubic centimetres/0.214 cubic inches. No tolerance allowed.
- 2.2.b The fuel tank, including filter and fuel pipes up to the carburettor may hold a maximum of 125 millilitres/4.23 fluid ounces. No loose inserts allowed. Any tank found to be illegal (over 125 millilitres/4.23 fluid ounces) 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 temperatures above 20 degrees C/68 degrees F. Only IFMAR approved measuring equipment to be used.
- 2.2.c All cars will be fitted with brakes and clutch in such a manner as that the car can be held stationary whilst the engine is running.

2.3. SILENCER

- 2.3.a Only IFMAR homologated silencers are allowed.

- 2.3.b The silencers used on the car have to bear their homologation number during the entire championship and their measurements have to conform with those on the homologation sheet issued by IFMAR.
- 2.3.c Silencers may be homologated by ROAR, EFRA or FEMCA up to four (4) months before the event. Silencers homologated in the four (4) month period before the event will not be included on the IFMAR Approved Muffler List for that event.
- 2.3.d The IFMAR Approved Muffler List will be supplied to each participant with the rulebook two (2) months prior to the event.
- 2.3.e The IFMAR Approved Muffler List with detailed drawings must be available in Technical Control. Additional copies of the IFMAR Approved Muffler List must be available to each participant, if requested.
- 2.3.f The first cone of all homologated mufflers may be reduced by a maximum of 8mm./0.315in. (length). The outlet pipe may have a minus tolerance of 2mm./0.078in. (length).

2.4. TYRES

- 2.4.a All tyres must be black with the exception of side wall lettering.
- 2.4.b 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.

2.5 WINGS

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

2.6. APPEARANCE

- 2.6.a Cars shall be a reasonable representation of the style of car used for Off-Road, Desert or Trial racing.
- 2.6.b Full body shells 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 body shells are fitted, provision for trimming shall be as in sub-section "d"
- 2.6.c Where a roll-cage is fitted an open wheel style body shell 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.
- 2.6.d Openings may be cut in the shell to allow access to fuel filler, radio switch and engine adjustment. Clearance around such items shall be kept to a minimum.
- 2.6.e Body shells as described in Section 2.6.c need not conform to scale but should conform to the provisions of 2.6.a.
- 2.6.f Acceptance of a Saloon body shell by another IFMAR section shall be deemed to imply approval by the Off-Road Section for racing purposes.
- 2.6.g Cooling openings are allowed in windows.

2.7 FUEL

- 2.7.a The following additives are strictly prohibited; Hydrazine, Hydrogen Peroxide, Toluene, Propylene Oxide.
- 2.7.b Random fuel tests will be made at any time during the World Championship. Samples and counter samples will be collected for analysis and any competitor found to be using any of the above additives will be disqualified and any race result obtained will be null and void. Further punishment may be determined by IFMAR, such as a ban from all future International Racing.

2.8 DRIVER AIDS

The use of traction control devices, active suspension devices and any steering control aided by gyroscopes/'G'-force sensors is strictly forbidden. Sensors are only allowed for the purpose of passive data recording and not for adjusting the

performance of the car whilst in motion. It is the object of this rule to ensure that the IFMAR 1/8th I.C. Off-road World Championship be a test of driver skill.

SECTION THREE - ORGANISATION & PROCEDURES

3.1 ALLOCATIONS FOR WORLD CHAMPIONSHIPS

- 3.1.a The number of drivers will be decided by IFMAR (see Section 1).
- 3.1.b For allocation and re-allocation procedures see IFMAR General Rules (see Section 1).

3.2 RACING FORMAT

- 3.2.a Qualification heats shall contain a maximum of 10 drivers and shall be of ten (10) minutes duration. A maximum of fifteen (15) drivers may be allowed by IFMAR in exceptional circumstances. The order of the heats will be: -

FOR 15 HEATS:

ROUND	START ORDER HEAT #
1	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15
2	4,5,6,7,8,9,10,11,12,13,14,15,1,2,3
3	7,8,9,10,11,12,13,14,15,1,2,3,4,5,6
4	10,11,12,13,14,15,1,2,3,4,5,6,7,8,9
5	13,14,15,1,2,3,4,5,6,7,8,9,10,11,12
6	15,14,13,12,11,10,9,8,7,6,5,4,3,2,1

FOR 10 HEATS:

ROUND	START ORDER HEAT #
1	1,2,3,4,5,6,7,8,9,10
2	3,4,5,6,7,8,9,10,1,2
3	5,6,7,8,9,10,1,2,3,4
4	7,8,9,10,1,2,3,4,5,6
5	9,10,1,2,3,4,5,6,7,8
6	10,9,8,7,6,5,4,3,2,1

- 3.2.b Each driver shall be entitled to a minimum of 6 attempts at qualification, weather permitting.
- 3.2.c An audible warning will be given in English language at one (1) minute and at thirty (30) seconds during the warm-up period. At the starting time, an audible and visible signal will be given for a rolling start.
- 3.2.d The start position should be arranged so that the master and individual clocks for all cars will be triggered correctly.
- 3.2.e All drivers will be entitled to participate in a final.
- 3.2.f The top qualifier will compete in the semi-final 'A' and will receive the Top Qualifier's trophy at the Awards' Banquet. The first four (4) drivers from each semi-final will go into the Main Final. The remaining two (2) positions in the Main Final will be taken by the next two (2) fastest drivers from either of the two (2) semi-finals. The positions in the Main Final are determined by each drivers' semi-final result. In the case of different weather conditions (dry/wet) during the semi-finals, five (5) from each semi-final will go to the Main Final.
- 3.2.g The 'A' series sub-finals will be composed of odd placed drivers following qualification, the 'B' series sub-finals will be composed of even placed drivers after qualification.
- 3.2.h All sub-finals consisting of ten (10) drivers are of twenty (20) minutes duration with the top three (3) from each sub-final progressing to the next sub-final up to and including the quarter (1/4) finals.
- 3.2.i No allowance for changing conditions from 'A' or 'B' sub-finals will be made.
- 3.2.j The main Final, consisting of 10 (ten) cars, is of sixty (60) minutes duration.
- 3.2.k The Race Director may authorize track repairs at his discretion. Team Managers will be informed.
- 3.2.l During heats and finals, a maximum of two (2) mechanics per driver and the designated Team Manager are allowed in the pits. The Team Manager must not act as a third mechanic.

3.3 TIMED PRACTICE SYSTEM

- 3.3.a The practice for drivers will only be run in the way of a three round race in qualification group order.
- 3.3.b The first round will be a non-timed organised practice of ten (10) minutes duration and will not count towards re-seeding. The second and third rounds will be of ten (10) minutes duration after warm-up, the last five (5) minutes being timed for re-seeding. Prior to the start of these five (5) minutes, a warning is given at two (2) minutes, one (1) minute and thirty (30) seconds and an announcement stating "Clock is running". Results of the second and third rounds will be published (laps and times). Points will be awarded according to the results of the second and third rounds only.
- 3.3.c The best point result scored in second or third rounds will be used to sort drivers by performance and to re-seed them before the actual qualifying rounds.
- 3.3.d For re-seeding drivers into their new qualification heats, the first fifty (50) best drivers are to be spread with common sense (countries, performance, radio frequencies etc.) over the heats 1 to 5, the next best fifty (50) in heats 6 to 10, and the remaining fifty (50) drivers in heats 11 to 15.

3.4 QUALIFYING SYSTEM

- 3.4.a In each round, drivers will score points based on the laps and times achieved. The maximum number of points awarded to the best driver will be equal to the total number of participants plus 5 (five).

Fastest in each round will score: number of participants, +5 points.
 2nd fastest will score: points of fastest driver, -2 points.
 3rd fastest will score: points of 2nd fastest driver, -1 point.
Down to last position one by one.

- 3.4.b In every round, in case of a tie, the points will be equally awarded to each driver, and the first driver not to tie, will receive one point less per tie.

For example, with 150 drivers racing, maximum number of points is 155.

1st driver		will score	155 points
2nd driver		will score	153 points
3rd driver		will score	152 points
4th driver		will score	151 points
5th driver	7 laps, 10:01:00	will score	150 points TIE
6th driver	7 laps, 10:01:00	will score	150 points TIE
7th driver	7 laps, 10:01:00	will score	150 points TIE
8th driver	7 laps, 10:10:00	will score	147 points

- 3.4.c In a case of two or more drivers having the same point score, the next best point score determines position. If still unable to resolve with the next best rounds, then the driver with the fastest laps and times in his best score will determine position.
- 3.4.d Out of six (6) rounds, four (4) will be added to account for the classification's ranking.
- 3.4.e One hundred and fifty drivers (150) will be entitled to a sub-final.
- 3.4.f If a driver does not start a heat, he receives no points.

3.5 FINALS

- 3.5.a 'A' series of sub-finals will be composed of odd placed drivers following qualification, 'B' series sub-finals will be composed of even placed drivers after qualification.
- 3.5.b Every qualifying driver must progress to the Main Final in accordance with the accompanying Christmas Tree system.
- 3.5.c All sub-finals are twenty (20) minutes duration with the top three (3) from each sub-final, up to the quarter (1/4) finals, progressing to the next sub-final, and the first four (4) from each semi (1/2) final progressing to the Main Final, along with the next two (2) fastest drivers from either of the two (2) semi-finals.
- 3.5.d No allowance for changing conditions from 'A' or 'B' sub-finals will be made.

- 3.5.e. After the finish of the quarter finals, each semi-final ('A' & 'B') is entitled a ten (10) minutes practice time with numbers and appropriate radio frequencies.
- 3.5.f DELAYED START – As long as the starter has not called the cars to the starting 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 the Main Final. The track shall be closed to all cars during the delay period. The driver requesting the delay for whatever reason, except an error in frequencies by Race Control, must start from the back of the grid, six (6) metres/19.68 feet behind the last official grid position.

3.6 CHRISTMAS TREE

A	FINAL 60 minutes	B
1 st , 2 nd , 3 rd , 4 th + *	*+ next fastest 2 drivers from either semi-final	1 st , 2 nd , 3 rd , 4 th + *
1, 3, 5, 7, 9, 11, 13 1 st , 2 nd , 3 rd	1/2 20 minutes	2, 4, 6, 8, 10, 12, 14 1 st , 2 nd , 3 rd
15, 17, 19, 21, 23, 25, 27 1 st , 2 nd , 3 rd	1/4 20 minutes	16, 18, 20, 22, 24, 26, 28 1 st , 2 nd , 3 rd
29, 31, 33, 35, 37, 39, 41 1 st , 2 nd , 3 rd	1/8 20 minutes	30, 32, 34, 36, 38, 40, 42 1 st , 2 nd , 3 rd
43, 45, 47, 49, 51, 53, 55 1 st , 2 nd , 3 rd	1/16 20 minutes	44, 46, 48, 50, 52, 54, 56 1 st , 2 nd , 3 rd
57, 59, 61, 63, 65, 67, 69 1 st , 2 nd , 3 rd	1/32 20 minutes	58, 60, 62, 64, 66, 68, 70 1 st , 2 nd , 3 rd
71, 73, 75, 77, 79, 81, 83 1 st , 2 nd , 3 rd	1/64 20 minutes	72, 74, 76, 78, 80, 82, 84 1 st , 2 nd , 3 rd
85, 87, 89, 91, 93, 95, 97 1 st , 2 nd , 3 rd	1/128 20 minutes	86, 88, 90, 92, 94, 96, 98 1 st , 2 nd , 3 rd
99, 101, 103, 105, 107, 109, 111 1 st , 2 nd , 3 rd	1/256 20 minutes	100, 102, 104, 106, 108, 110, 112 1 st , 2 nd , 3 rd
113, 115, 117, 119, 121, 123, 125 1 st , 2 nd , 3 rd	1/512 20 minutes	114, 116, 118, 120, 122, 124, 126 1 st , 2 nd , 3 rd
127, 129, 131, 133, 135, 137, 139, 141, 143, 145, 147, 149	1/1024 20 minutes	128, 130, 132, 134, 136, 138, 140, 142, 144, 146, 148, 150

3.7 THE TIMETABLE

3.7.a Details of the timetable for the overall event with specific details on practice, qualifying and finals has to be included in the Status Report for the consideration of the IFMAR I.C. Section Executive (see General Rules). The event will be held over seven (7) days as follows:

Monday:	Registration and Technical Inspection Practice in afternoon – not used for re-seeding Team Managers' Meeting
Tuesday:	2 Rounds of Timed Practice (see Rule 3.3) Opening Ceremony at conclusion of Timed Practice
Wednesday:	1 st and 2 nd Rounds of Qualifying Heats
Thursday:	3 rd and 4 th Rounds of Qualifying Heats
Friday:	5 th and 6 th Rounds of Qualifying Heats
Saturday:	1/1024 A and B Finals to 1/16 A and B Finals
Sunday:	1/8 A and B Finals, ¼ A and B Finals Semi-Finals Practice Semi-Finals A and B Main Final Prize Presentation on Drivers' Rostrum Awards' Banquet in evening.

3.7.b An opening ceremony will take place at which competitors will participate in a welcoming procession. Each National Team is asked to wear similar shirts. A flag and a sign bearing the name of each country will be provided by the Organiser.

3.7.c In the event of rain, racing will proceed irrespective of the weather, within reason. All races, including sub-finals and final, will take place at the appointed time, wet or dry. If heavy electrical storms occur, racing will be suspended. The Race Director, together with the Referees, will make the decision.

3.8 ACCOMMODATION REQUIREMENTS

3.8.a The drivers' area must accommodate all drivers and be equipped with tables and seats, in a covered area protected from adverse weather conditions. The drivers' rostrum must be accessible from the drivers' area.

3.8.b The drivers' rostrum must accommodate ten (10) drivers with a minimum of 80cm space for each driver and if fifteen (15) driver heats have been approved by IFMAR, the drivers' stand must be altered to accommodate fifteen (15) drivers with a minimum of 80cm space for each driver. The width of the rostrum must be a minimum of 1.25 metres. Height of the rostrum-floor to be between two (2) and three (3) metres. Access to the rostrum must be by a solid stair, with a minimum width of 1.2 metres. A strong parapet is mandatory. The rostrum must be protected against bad weather or sunshine.

Mechanic must be positioned under his driver's position. During finals, positions will be selected by drivers in order of qualifying position, i.e. No. 1 qualifier has first choice, No. 2 qualifier has second choice, etc.

3.8.c The drivers' rostrum must be placed in a position that provides equal view of the track to each of the drivers at any place on the rostrum, during practice or racing. The view must not be obstructed by any object (pillar, flagpole, other drivers, etc). The distance from the front of the rostrum to the nearest part of the track must be between two (2) and four (4) metres.

3.8.d The transmitter impound must be close to, or if possible, on the rostrum. Transmitters must be protected against bad weather and sun and should be stored in a safe way.

3.8.e Timing and lap counting area must be located at a slow part of the track, with a good view for all lap counting officials. The number of a car must be readable for at least

two (2) seconds from that area. Adequate space must be provided for lap counting officials. The area must be protected against bad weather. Interruptions to lap-counting officials by driver, managers or others must be prevented.

- 3.8.f A scoreboard must be positioned at a convenient place not far from the timing and lap counting area and shall be accessible to all competitors and team managers. The scoreboard shall be protected against wind and rain.
- 3.8.g Referees must be provided with an exclusive vantage point for their use only and separated from all drivers and mechanics. There must be a means of direct communication (intercom) between the Referees and both the drivers' rostrum and the flag marshal.
- 3.8.h All official announcements concerning the race must be made in English in the pit area, drivers' stand and mechanics' area.
- 3.8.i A supply of clean running water and compressed air must be available enabling competitors to clean their cars.

3.9. SAFETY

- 3.9.a The safety of the spectators is of prime importance and must be considered when laying out track and spectator areas.
- 3.9.b The safety of officials, helpers, competitors and accompanying people are of equal importance, but it is assumed that they are more aware of any potential danger.
- 3.9.c Spectators, competitors, marshals and officials must be efficiently protected against the cars by adequate barriers.
- 3.9.d Track markers must be shaped and placed in a way that prevents cars from being projected into the public when hit at full speed.
- 3.9.e Technical inspection must always include the safety aspects of the cars. No sharp edges or other protruding parts of cars that may cause serious injuries in case of an accident are permitted.
- 3.9.f First Aid supplies must be available throughout the event (including practice) in case of necessity.
- 3.9.g A First Aid officer must be present throughout.
- 3.9.h Police and emergency services must have access to all areas, both public and restricted.
- 3.9.i An insurance against accidents and legal liability is compulsory. A copy of the Insurance Certificate must be enclosed with the Contract for the event.

3.10 LAP COUNTING & TIME KEEPING REQUIREMENTS & PROCEDURE

- 3.10.a During IFMAR sanctioned events the lap counting is to be done automatically by means of an automatic lap counting system and transponders fitted on to each of the cars' body shell.
- 3.10.b Two approved independent automatic systems must be used simultaneously at IFMAR sanctioned events. IFMAR will check both systems. Both systems must produce a record of all the individual lap times of all cars and the number of laps and final time after finishing. Lap times and final time must be in seconds to 1/100th second (and minutes/hours). Both systems will be operated by the organising club.
- 3.10.c Detailed requirements follow:
 1. Lap times must be in seconds to 1/100th second and final times in hours, minutes, and seconds to 1/100th second.
 2. Printouts must be kept with the record sheet, on which the final result is written down.

- 3.10.d The results from the first and second system are compared and in case of differences, the time keeping official must examine the data produced and in particular the lap time sheets. The final decision on the result is the responsibility of the Time-Keeper.
- 3.10.e The time keeping official is responsible for publication of the final results. He must store all the data produced by the two (2) systems until the end of the meeting which can then be used in case of protest against the results.
- 3.10.f Electronic systems must be connected to a reliable power source (not a generator). Connecting plugs must be firm and secure and not easy to disconnect. When the two systems are run simultaneously they must not be connected to the same power source.
- 3.10.g Both the first and the second time keeping and lap counting system must satisfy the requirements of IFMAR and therefore must be proposed and explained on the Sanction Questionnaire.
- 3.10.h The official result sheets containing results of all heats, sub-finals and finals must be sent to the relevant IFMAR Section Chairman within ten (10) days of the race. The final classification of the qualifying heats must also be completed and sent to the IFMAR Section Chairman.
- 3.10.i If both the primary and support lap counting system fail during a qualifying heat or final, the heat or final will be re-run as soon as is practicable. Under no circumstances will any lap score or time, other than those from the official time-keeping equipment, be accepted for any purpose to do with the running of an IFMAR race.
- 3.10.j Transponders are to be released by the Organisers to the drivers one heat before the respective heat.
- 3.10.k The secure fitting of the transponder to the car's bodyshell or chassis remains the responsibility of the driver.
- 3.10.l If a driver loses a transponder during the race or if the transponder is not working, the driver and pit-crew will be notified by a race official as soon as possible.
- 3.10.m If a lap counting problem occurs, transponders must be moved to a better position on the car on the Race Director's instruction.
- 3.10.n The provision of on-site copying facilities is mandatory.
- 3.10.o A suitable working computer with proper race proven programmes must be provided to sort lap times, print results from heats and sort final positions from each series of races within fifteen (15) minutes of the completion of the series of races.
- 3.10.p Automatic lap counting, with cumulative and split lap times, will be in place for each car. Competitors are required to install a small transponder into their cars according to the organiser's instructions. An audio/video tape recording will be made.
- 3.10.q Every competitor is allowed to use his own IFMAR approved personal transponder if the lap counting officials are informed and agree.
- If an organizer is using a personal transponder system, he has to provide to all participants not having their own transponder, a transponder for every heat or final free of charge. It is strictly forbidden to ask for a rental fee. A deposit of the replacement value for the personal transponder may be demanded. If a competitor by any reason destroys or does not return a personal or normal transponder, he loses his deposit.
- 3.10.r Significant stops (refueling, tyre changes, crashes, etc.) will be noted with times of stop and restart. This record might not include every incident, however, its intent is to verify incidents, whenever possible.
- AMB lap counting system or IFMAR approved equivalent must be used in duplicate.

3.11 RACE OFFICIAL - REFEREES

- 3.11.a The main task of referees is to observe the racing and in particular to ensure good sportsmanship during racing. They will ensure that the current IFMAR rules are observed by everybody.
- 3.11.b Three referees are required for all IFMAR World Championships.
- 3.11.c One (1) IFMAR referee will be appointed by IFMAR. Travel and accommodation expenses will be paid for by IFMAR, EFRA, ROAR, FEMCA and FAMAR equally. The IFMAR referee will be supported by two (2) appointed deputy referees, one nominated and paid for by the host Bloc and one nominated and paid for by the host country's Association (see General Rule 1.12). They must be experienced and unbiased people with a good knowledge of the English language and the current IFMAR rules and will have acted as a referee at least on national level before. A back-up referee must be nominated by each organisation in case of absence of the official referee.

3.12 REFEREES' DUTIES

- 3.12.a At all times during the qualifying heats two referees in turn will watch and observe the racing from start to finish. During all Finals all three referees must observe the racing from start to finish.
- 3.12.b The referees always work together, they take decisions and issue warnings and instructions in consultation. the referees may take action after an initial warning, but in all cases a maximum of three (3) warnings means automatic disqualification from the event.

3.13 REFEREES' POINTS OF OBSERVATION

- 3.13.a Bad sportsmanship during racing, i.e. impeding the progress of other participants, deliberate slowing down or waiting for another car, deliberate crashing into another car, deliberate cutting of corners or reckless driving in general.
- 3.13.b Unsportsmanlike behavior of drivers and mechanics involved in the racing.
- 3.13.c Incorrect use of the entry and exit to the pits.
- 3.13.d Repairs and refueling outside the pit area.
- 3.13.e Cars that do not conform to the regulations before the start is given or during the racing (i.e. loss of body shell, exceeding the noise rules due to loss or damage of silencer).
- 3.13.f Cars that are in an un drive able or dangerous condition due to damage or malfunctioning for the car.
- 3.13.g Starting procedure, i.e. writing down start line infringements.
- 3.13.h In the event of an early start, if not observed by the Time Keeper and/or the Starter, the Referees may also make the call.
- 3.13.i It is not the duty or the responsibility of the referees to check whether the cars conform to the technical rules, this is always the responsibility of the Technical Inspector. The referees check the methods used for technical inspection.
- 3.13.j If after repairs to a car judged to be in a un drive able or dangerous state a referee or the Race Director have approved the repair, the driver may continue his race.

3.14 REFEREES' AUTHORITY

- 3.14.a The referees issue warnings in the event of infringements of any of the points as described under section 3.14 and ultimately may even issue a black flag (disqualification) when their warnings are not responded to by a driver.
- 3.14.b Warnings and instructions are announced by the referees themselves and they will keep a record of the warnings and instructions issued.
- 3.14.c Three successive warnings lead to disqualification (black flag).
- 3.14.d All announcements will be in English. Warnings will be posted on to the results sheets.
- 3.14.e Instructions issued by the referees must be observed immediately.

3.14.f Warnings for bad sportsmanship are announced with the words; "First Warning to car No ? for bad driving"; "First Warning to Car No ? for mis-use of the pit area". Instructions for repairs are announced with the words; "Car No ? Repair Body/Silencer/Car/etc".

3.14.g Appeals against the decisions of the referees must be addressed to IFMAR in writing. IFMAR is not obliged to act on such a complaint.

3.15 REFEREES' FACILITIES

3.15.a Referees must be provided with an area from where all parts of the track, the drivers' rostrum and the refuelling area can be observed. The place must be separated from the drivers' area, to ensure a quiet and undisturbed working area (see section 3.8.i). Protection (walls, roof, etc.) must be given against all weather conditions.

3.15.b The place must be equipped with a minimum of three (3) chairs, a table and a monitor connected to the lap counting system to show the race order. There must be a separate communication system with a microphone and speakers direct to the drivers' rostrum and the pit lane to enable Referees' instructions to be heard only by the drivers and the mechanics in the pit lane. N.B. This system is to be totally separate from any public address system used for announcements. A system of preference for the Referees' microphone over the announcer's microphone must be provided by the organizers (see section 3.8.i).

3.15.c The organiser is responsible for providing the Referees with lunch, refreshments and a ticket to the Awards' Banquet.

3.16 REFEREES' REPORT

3.16.a Referees make up a report to be sent to IFMAR within ten (10) days. The report will contain information on the organization, accommodation and the racing. The Referees' notes have to be included. A copy of the report is sent to the organizer of the race meeting. Copies may be obtained on application to IFMAR.

3.17 TIME KEEPING SUPERVISOR AT WORLD CHAMPIONSHIPS

3.17.a For all World Championships, IFMAR will either approve or nominate a Time-Keeping supervisor to check the systems provided and operated by the organising club. The official Time Keeping Supervisor, although not operating the system, will have a good knowledge of the system to be used at the event. IFMAR will not be responsible for the costs.

3.17.b IFMAR approves the equipment of both time-keeping systems.

3.17.c The organizing club must provide experienced lap counters and a suitable accommodation for the Time-Keeping Supervisor.

3.17.d The Time-Keeping Supervisor is responsible for recording all the individual lap times and total laps plus finishing time of all drivers during all heats, sub-finals and finals. He is responsible for the classification of the results and the selection of drivers for sub-finals and finals. The Race Director must verify this classification and selection.

3.17.e After the finish of any heat, sub-final or final the results of the first and second time-keeping system are compared by the Time-Keeping Supervisor. In cases of difference between the two systems, the Time-Keeping Supervisor investigates both results and takes the decision on the final result. Only the results approved by the Time-Keeping Supervisor may be published to the competitor and are official.

3.17.f In case of protests against results, the Time-Keeping Supervisor together with the Race Director will check on the questioned result and will take the decision.

3.17.g All results, in writing, printing or otherwise are the property of IFMAR and are kept by the IFMAR Time-Keeping Supervisor until the end of the event. After the event all relevant data will be stored in IFMAR files. Copies of the original data will be left with the Organiser.

3.18 RACE OFFICIALS & RACE DIRECTOR

3.18.a In IFMAR sanctioned races it is mandatory to have the following official positions held by different persons:

- | | |
|------------------|----------------------------|
| 1: Race Director | 2: Assistant Race Director |
| 3: Time-Keeper | 4: Technical Inspector |

Other officials have to deal with and look after the following:

- 5: Registration of Entrants
- 6: Giving Start & Finish Signals
- 7: Lap Counting & Time-Keeping
- 8: Recording & Publishing Results
- 9: Separation of Public, Drivers Areas & Track
- 10: Supervising Marshalling around track
- 11: Track Marshalling
- 12: Use of Spectrum Analyzer
- 13: Transmitter Impound

3.18.b The Race Director is responsible to follow the schedule of the event. The Race Director ensures that various tasks under his responsibility are well done including; Time-Keeping, Starts, Marshalling, Display of Results, Commentary to the Public, Comments to the Drivers, Technical Inspection, Frequency Control.

3.18.c The Race Director receives protests and decides if the International Jury has to meet. He also has to take urgent decisions or stops a race for safety or any other unforeseen situation.

3.18.d The Race Director is under the authority of IFMAR.

3.18.e All officials, except referees and the Time-Keeping Supervisor are subordinate to the Race Director who issues detailed instructions for all jobs.

3.18.f The Assistant Race Director will represent the host country or organisation and will assist the Race Director in co-coordinating all race matters with host organisation officials.

3.19 QUALIFICATION OF OFFICIALS

3.19.a All officials must be properly trained and experienced persons, with the main positions held by persons with International experience and a good knowledge of the rules and the English Language.

3.19.b For a World Championship the Race Director must be known and approved by IFMAR.

3.19.c No official is allowed to take part in the race.

3.19.d Officials should be clearly distinguished from competitors and spectators by wearing a band or otherwise.

3.19.e Marshals are compulsory and will be provided by the organizer. They must be experienced and supplied with gloves or other protection. No drivers or mechanics will be allowed as marshals. One marshal should be posted every thirty (30) meters. Other than running marshals all other marshals shall remain at their posts at all times during racing. No other person is allowed on the track whilst racing is in progress. Marshals must be rotated from point to point between heats to minimize boredom.

It is preferable that marshals are fourteen (14) years of age or over.

3.19.f All marshals must wear closed shoes.

3.20 INTERNATIONAL JURY

3.20.a The International Jury consists of official representatives of each voting bloc who will each furnish a minimum of one representative and a maximum of three representatives to serve on the International Jury. EFRA, ROAR, FEMCA and FAMAR

will have a total of one vote each regardless of the number of representatives the bloc has.

- 3.20.b The relevant IFMAR Section Chairman shall always act as Chairman during International Jury Meetings and exercise a casting vote, if necessary. In the absence of the relevant IFMAR Section Chairman, the highest ranking IFMAR official shall take the chair at any International Jury Meetings. The Race Director and the IFMAR President are members of the Jury but do not have a vote in the decisions.
- 3.20.c The Referees may be called by the International Jury for opinions and explanations as deemed necessary.
- 3.20.d All decisions are taken by simple majority vote. The International Jury may request evidence and/or the presence of drivers involved or Team managers.
- 3.20.e Jury members must be approved by their organization and a second person appointed to serve in the event of a temporary absence of the official representative.
- 3.20.f Prior to the commencement of an International Jury Meeting, any mobile telephones in the meeting room must be turned off and placed on the meeting table until after the completion of the Meeting.

3.21 RESPONSIBILITIES OF THE INTERNATIONAL JURY

- 3.21.a To adjudicate in unforeseen situations.
- 3.21.b To handle protests not covered by Race Directors responsibilities.
- 3.21.c To change the race procedures or cancel the race whenever this is required due to reasons of safety aspects.
- 3.21.d To check that the race is run according to the official IFMAR rules.
- 3.21.e When necessary the Race Director may call for a meeting of the International Jury.
- 3.21.f To make official by announcement any decisions voted on by the Team Managers' Committee, provided the International Jury agrees with these decisions.
- 3.21.g The International Jury is not responsible for the organization and well running of the race.
- 3.21.h The Chairman of the International Jury will make official the results of the World Championship through the ranking IFMAR Officer present at the event.
- 3.21.i When necessary the Race Director calls the International Jury to meet. The International Jury may also be called by IFMAR.
- 3.21.j The Organizer must provide a room for the International Jury to meet in seclusion.
- 3.21.k Jury members may not have dual duties or be a Race Official or Referee. Jury members may be participants in the event but must allow auxiliary Jury Members to serve and vote in any protest involving said Jury Member as a participant.

3.22 TEAM MANAGERS

- 3.22 The Team Manager or a nominated deputy, must be present during all official racing. The Team Manager is appointed by his National Association. The responsibilities of the Team Manager are: -
 - 3.22.a To be present at the drivers registration of his team.
 - 3.22.b To be present at the technical control either before, during or after the end of the race in which his team members participate.
 - 3.22.c To look after the welfare and behavior of his team and take care that they all receive proper accommodation in the pit area.
 - 3.22.d To attend the Team Managers' Meeting prior to the start of the race or when a Team Managers' Meeting is called by the Race Director or the highest ranking IFMAR official in attendance.

3.22.e The Team Manager is the link between the national team and the race direction by receiving all information referring to; timetable changes, frequency changes, results of heats, semi-finals, finals, and all other information referring to the race.

3.22.f He is allowed to stay in the pit area when a race has a participant from his team and it is in progress.

3.23 TEAM MANAGERS' COMMITTEE

3.23.a Each country will have a Team Manager who is responsible to pass on complaints, protests or suggestions from his team members to the Race Director. The Race Director will then decide whether a Team Managers' Meeting should be called to discuss a vote on the matter raised. If the Race Director does call such a meeting and the majority of Team Managers support the matter raised, the Race Director must then refer to the International Jury for the final decision.

3.24. ARRANGEMENT OF HEATS

3.24.a The Race Director may only change the composition of a heat when there is a serious and obvious problem that cannot be solved otherwise.

3.25 REGISTRATION

3.25.a Drivers' registration must take place on the day prior to the race.

3.25.b IFMAR may authorize later registration at their discretion.

3.25.c During registration, every driver will be given an envelope which includes:

a detailed schedule including starting times of each heat, three (3) sets of numbers for the car, (3) sets of numbers for the wing, one (1) set of numbers for the transmitter, one (1) badge each for the driver (this badge must show his passport-size photograph) and mechanic. The size of car numbers to be minimum 40mm high x 30mm wide with a stroke of minimum 8mm in black on a white background measuring minimum 55mm in height by minimum 40mm width. Any other necessary information.

3.25.d One badge/pass must be provided for each country's Team Manager.

3.25.e When registration of drivers is carried out, each driver will sign a form that states that he accepts, and will abide by the published rules of the event.

3.25.f The following colored badges will provide access to pits and track:

- | | |
|------------------------------|--|
| Orange badges/Team Managers: | – pits, staging area, special viewing area |
| Blue badges/drivers: | – drivers' stand, pits, staging area |
| Yellow badges/mechanics: | – pits, staging area |
| Green badges/Press: | – pits, staging area, special viewing area |
| Red badges/race officials: | – all areas |
| Grey badges/IFMAR officials: | – all areas |

3.26 FREQUENCIES & FREQUENCY CHANGES

3.26.a Only frequencies of the competent body of the country concerned will be used. Other frequencies may only be used with the approval of the Organizer, who then takes no responsibility. The Organizer may refuse non-authorized frequencies, providing competitors have been notified in the Race Invitation.

3.26.b A frequency flag/clip or other usual method will be used to show the frequency of the transmitter. During practice frequency flags may not obstruct the view on the track of other drivers.

3.26.c In case of more than one driver using the same frequency during practice, the time for each driver must be equally divided.

3.26.d In the case of two (2) drivers using the same frequency who qualify for the same sub-final or final, the faster qualifying driver will keep his frequency and the other must change.

- 3.26.e When a frequency change is required up to ten (10) minutes time must be allowed following notification to carry out the change.
- 3.26.f Lower qualifying drivers, who cannot or will not change their frequency, will not take part in the sub-final or final for which they have qualified.
- 3.26.g If a driver must change his frequency before the start of a sub-final or final due to an error of the Organizer, he will be allowed up to ten (10) minutes time to carry out the change.
- 3.26.h If a driver finds his radio equipment defective or has made an error in the selection of his crystals, the race will not be delayed beyond the schedule.
- 3.26.i All frequency changes must be authorized by the Race Director before the change is made.
- 3.26.j The Organizer shall not display any drivers' transmitter frequencies on any heat sheets, result sheet or race schedule to preserve the security of the frequency control systems.
- 3.26.k Each driver in the Main Final shall be permitted to change his frequency before the start of the race. Only the race Director is permitted to know the frequencies used by the Main Finalists.

3.27 TRANSMITTERS & TRANSMITTER IMPOUND

- 3.27.a Transmitters must be constructed in such a manner that the crystal can be changed. All competitors must have at least two (2) alternative frequencies available to that registered during registration. Prior to the commencement of his heat, sub-final or final, a driver may go into the pit with his transmitter for the sole purpose of checking or repairing his radio equipment.
- 3.27.b Transmitters must be checked by using a frequency counter and wherever possible a spectrum analyzer, operated by a qualified official.
- 3.27.c Spare transmitters in the pits will cause disqualification.
- 3.27.d The Organizer must provide protected and secure storage for impounded transmitters, preferably adjacent to the drivers' rostrum (see Section 3.8.d).
- 3.27.e Transmitters are impounded immediately after a request by the Race Director or other Official. When impounded for the first time, transmitters are marked with heat-numbers and are stored accordingly.
- 3.27.f Transmitters must be impounded at all times whilst racing is in progress.
- 3.27.g Transmitters are only released for the next race after all the transmitters used in the previous race are impounded by the officials. Transmitter impound must take place immediately after the driver has completed his race or has finished driving and is leaving the drivers' rostrum.
- 3.27.h At any time, with the Transmitter Impound Supervisor's or Referee's agreement, a driver may bring his car, together with his Team Manager, to the rostrum to make adjustments, subject to frequency clearance.
- 3.27.i Transmitters may never be taken onto the track or into the pit area.
- 3.27.j Extensions and/or additions to the antenna on a transmitter are forbidden.
- 3.27.k Use of 2.4GHz DSM/DSS systems.
These systems can be used, if permitted in the organizing country. However, due to the way they operate, a driver using such a system cannot ask for any delay in case of radio problems.

3.28 TECHNICAL INSPECTION

- 3.28.a Technical Inspection must take place before the start of the racing. Cars must be presented for inspection after being called by the officials.

- 3.28.b Technical Inspection must include a thorough check-out of the car and also the transmitter.
- 3.28.c Only one car will be accepted. When transmitters are checked, the spare transmitters must also be presented for inspection.
- 3.28.d When a car or transmitter does not comply with the rules, changes may be carried out before presenting it for final approval.
- 3.28.e Cars which have passed Technical Inspection must be marked with the drivers identification number, consisting of the heat number and the car number. This number must be engraved on to the chassis plate and the fuel tank will be marked. One (1) car per driver only.
- 3.28.f For each competitor the race has officially started after technical inspection and approval of his car.
- 3.28.g The Technical Inspector may request inspection of any entrant's car at any time during the race, without giving reasons.
- 3.28.h All cars of finalists go into a 'Parc Ferme' immediately after the finish of the final and are inspected. Cars must remain with the officials and be untouched by drivers or mechanics. Any race distortion must be ignored. Inspection be on at least: engine, tank capacity, chassis (dimensions).
- 3.28.i The marked part of the car, the main chassis, may only be changed with the approval of the Race Director. The original marked chassis must be left with the Race Director.

3.29 TEAM MANAGERS' MEETING

- 3.29.a A Team Managers' Meeting must be held prior to the race and it must be held in the host nation's language and at least English. The Race Director must call the meeting and Team Managers, Referees and other officials must be present.
- 3.29.b The Team Managers' Meeting must be held between fifteen (15) and thirty (30) minutes before the start of racing.
- 3.29.c The following points should be covered in the Team Managers' Meeting; security and safety items, the starting procedure and explanation, disciplinary questions, other items concerning the contestants, changes in the organization or procedures, presentation of the main officials and Referees.

3.30 FLAGS

- 3.30.a The use of the following flags is compulsory: Starting Flag - the National flag of the host country where the race is being held. Finish Flag - a chequered flag. Black Flag - all black flag.
- 3.30.b Black Flag: The car in question must immediately stop in the pit to receive instructions (see Sections 3.13 and 3.14). The black flag will be used by either a referee or the Race Director if a car is judged to be in an undriveable or dangerous condition. If after repairs have been carried out and after the Race Director or Referee has approved the repair, the driver may continue his race. Cars which lose their bodies or other parts must immediately stop and carry out the necessary repairs after which they may re-start.
- 3.30.c The Black Flag is operated by the Flagman (Starter), who receives his instructions to do so from either the Race Director or the Referees. Under no circumstances may he use the black flag on his own authority. The Black Flag is always shown with the corresponding car number.
- 3.30.d Not responding to the black flag within two (2) laps will lead to disqualification of the participant concerned.

3.31 CAUSES FOR PENALTIES

- 3.31 Penalties in time, laps or even disqualification will be issued by the IFMAR referees for the following:

- 3.31.a Unsportsmanlike behavior.
- 3.31.b Deliberate corner cutting.
- 3.31.c Re-entering the race from other than the point at which the car left the track (not in the case of an engine stoppage and the car has to be re-started when the car re-enters the race from the pits).
- 3.31.d When repairs are made to the car other than in the pit area of the track.
- 3.31.e If the car is pushed over the finish line (it must finish under its own power).
- 3.31.f Not returning to the pits after finishing a race.
- 3.31.g If orders of Race Officials are not obeyed.
- 3.31.h If acting contrary to IFMAR rules.
- 3.31.i If a driver changes his complete car for whatever reason.
- 3.31.j If a driver changes his frequency without the permission of the Race Director.
- 3.31.k If a driver does not return his transmitter to the transmitter impound immediately after the finish of the race.
- 3.31.l The bad behavior and deportment of any competitor during the race meeting which could injure the image of the sport. This may become subject to National or International (IFMAR) sanction.
- 3.31.m If a car fails technical inspection, that round time will be disallowed.
- 3.31.n If a driver jump starts in any final, the Referees will give a 'Stop and Go' penalty.

3.32 REFEREES' WARNINGS

- 3.32.a Warnings and penalties issued by the referees must be noted on the result sheet and on the result board for the drivers (preferably in red).
- 3.32.b Time penalties must be awarded as stop and go penalties, where possible. The Referees should inform the driver and announce the penalty through the sound system. Within the next three (3) laps, the driver must bring the car to a specially-indicated area. The area will be controlled by the Start Marshal who will pick up the car and watch the Referee for an indication that the car can be returned to the track. The car must return to the track through the pit lane, during which time, if the driver wishes, the car may be re-fuelled and/or repaired after the stop and go penalty has been completed. In the case where the driver does not stop, or cannot comply, a one (1) lap penalty will automatically be given.

3.33 PROTESTS

- 3.33.a Only drivers participating in the race may enter a protest.
- 3.33.b A protest can only be made through the Team Manager.
- 3.33.c Protests may concern: The organization (acting contrary to the rules), officials (acting contrary to the rules), results (only when proof can be presented showing the result is wrong), other competitors (acting contrary to the rules to seek advantage or disadvantage for the protestor).
- 3.33.d Only written protests handed over to the Race Director within ten (10) minutes of the publication of results of the heat or occasion to which it is concerns, will be considered.
- 3.33.e Fifty (50) U.S. dollars or the equivalent in the host country's currency has to be paid to the Race Director, who will only then accept the protest. The time of receipt of the protest must be recorded.
- 3.33.f The protest must contain relevant information for the Race Director to be able to discuss the protest and decide.
- 3.33.g Protests are dealt with by the Race Director and if necessary the International Jury.

- 3.33.h The decision on the protest must be made within thirty (30) minutes of it being lodged and accepted. Only for important reasons and when the International Jury has to meet, may the decision be delayed to sixty (60) minutes maximum. When the protest concerns sub-finals or finals, either the decision must be taken ten (10) minutes before the start of the following final or the start of the next final must be delayed until ten (10) minutes after the decision.
- 3.33.i After the final race, there will be a 'protest period' of thirty (30) minutes after the provisional results have been published in writing on the score board. For this purpose the publishing time of the provisional results must be noted down on the result sheets. During these thirty (30) minutes, protests against the results may be presented to the Race Director who will then act accordingly. If no protests are presented within the thirty (30) minutes 'protest period', the provisional results become official and final and may be announced.
- 3.33.j The applicant of a protest cannot appeal against the decision.
- 3.33.k If the protest is upheld, the protest fee of fifty dollars (\$50 U.S.) must be returned immediately.
- 3.33.l The Race Director may without a protest being made, correct results or earlier decisions which he may deem necessary after consultation with his organizing staff and the referees.

3.34 PRIZES & PRIZE CEREMONY

- 3.34.a Immediately after the finish of the race and before the 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 Organizer immediately after the unofficial ceremony.
- 3.34.b The banquet and awards' presentation is to be held on the evening of the main finals or the following day/evening. Competitors are to receive a trophy as per rule 1.9.
- 3.34.c Winners are not entitled to claim prizes.
- 3.34.d Cash prizes or any other means of payment (paper tickets or coins of an obvious exchangeable value) are strictly forbidden.
- 3.34.e At the conclusion of the Banquet and Awards' Presentation, Team Managers will be given a results' folder showing the qualification results and the final positions as a closing report.

SECTION FOUR – TRACK REQUIREMENTS

4. TRACK

Minimum width: Four (4) meters.
 Minimum length: Three hundred (300) meters.

4.1 SURFACE

Artificial surfaces must be of the same type used for road construction. They must not be potentially dangerous or pollutant. Within the total length of the track fifty per cent (50%) minimum must be from natural soil.

Any straight longer than ten (10) meters must be from natural soil.

Any section made from artificial surface must not be longer than ten (10) meters.

A natural soil section of a minimum of five (5) meters must always separate two (2) artificial surface sections.

At location 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.

4.2 JUMPS AND OBSTACLES

When initially constructed, no jump will cause a car to launch higher than one and one half (1.5) meters in height from the base of the jump. Any combination of multiple jumps is considered to be a one-jump section and each track will have a minimum of four (4) jump sections.

4.3 SAFETY

Safety for everybody must be the most important aspect when designing the track.

4.4 MAINTENANCE

The track surface may only be repaired at the end of qualifying.

Repairs may be made, at any time, with the concurrence of the Race Director and the International Jury.

FINIS